

<http://www.portlandmodelengineers.org>

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**FOR THE BEGINNER # 24**

**Machine Reamers**

We talked about hand reamers last time; let's talk some about machine reamers this time. Machine reamers have straight or tapered shanks; the taper usually is a standard Morse taper. Chucking reamers are efficient in machine reaming a wide range of materials and are commonly used in drill presses, lathes, and screw machines. Helical flute reamers have an extremely smooth cutting action that finishes holes accurately and precisely. Chucking reamers cut on the chamfer at the end of the flutes. This chamfer is usually at 45 degrees. Jobber reamers are used where a longer flute length than chucking reamers is needed. The additional flute length gives added guide to the reamer, especially when reaming a deep hole. Shell reamers are finishing reamers. They are more economically produced, especially in larger sizes, than solid reamers because a much smaller amount a tool material is used in making them. Two slots in the shank end of the reamer fit over matching driving lugs on the shell reamer arbor. The hole in the shell reamer has a slight taper in it to assure exact alignment with the shell reamer arbor.

**SPEED:** A good starting speed, when machine reaming, is to use one-third to one half of the cutting speed used for drilling the same materials. Where conditions permit the use of carbide reamers, the speeds may often be increased over those recommendations for HSS (high speed steel) reamers. The limiting factor is usually an absence of rigidity in the setup. Any chatter, which is often caused by too high a speed, is likely to chip the cutting edges of the reamer. Always select a speed that is slow enough to eliminate chatter.

**FEEDS:** Feeds in reaming are usually two to three times faster than those used for drilling. The amount of feed may vary with different material, but a good starting point would be between .0015 and .004 in. per revolution. Too low a feed may glaze the hole, which has the result of work hardening the material. To high a feed tends to reduce the accuracy of the hole and the quality of the surface finish. Generally it is best to use as high a feed as possible to produce the required finish and accuracy.

**Wes Ramsey**

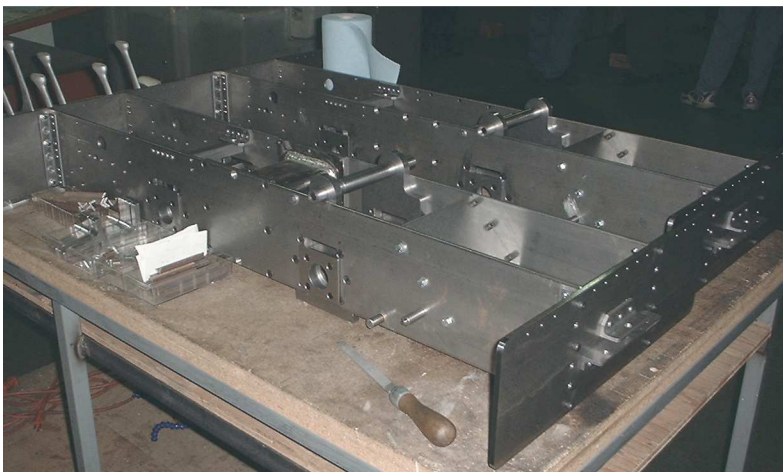
Last month's meeting was held at Grant Carson's shop. Quite a few people brought their work to show resulting in a fun and educating experience. Thanks, Grant, for providing a first class environment!



January's meeting is also scheduled at Grant's so be sure to mark your calendar for the second Saturday of the month, Jan. 14th at 1:00pm.

The directions and a map are provided on the next page. Hope to see you there! Better yet, bring something to show.

This past month members and guests were able see exhibits on a range of topics. Engines are always popular and this month was no exception with one gas and one steam engine rounding out this area. Another perennial favorite were the patterns and castings of several members. Since it was the last meeting of the year, elections for new officers were held. Grant had one of his projects on display (below). For other exhibits, read on.

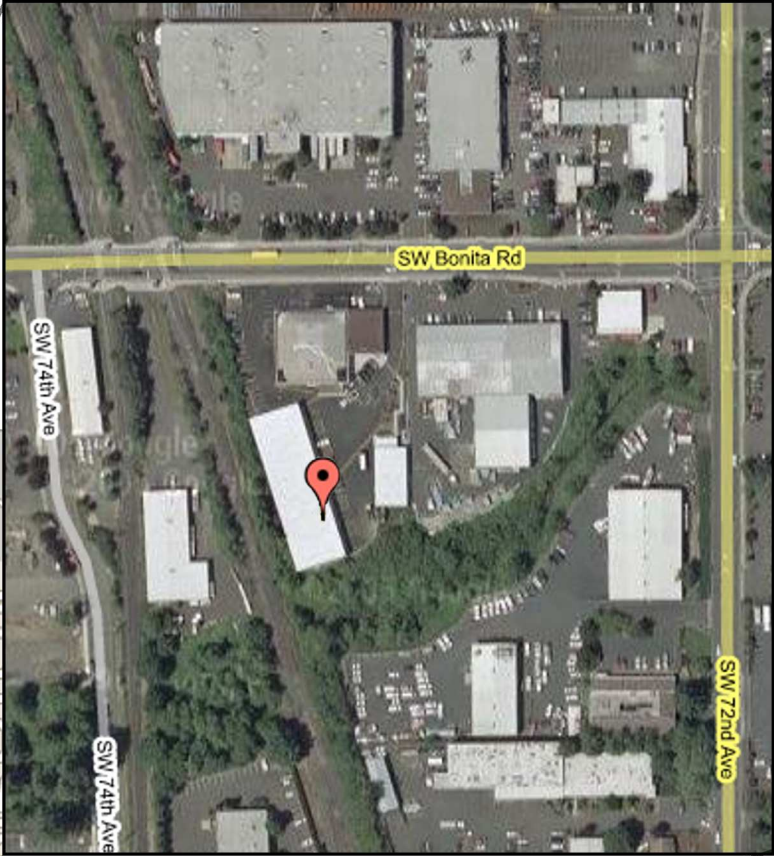
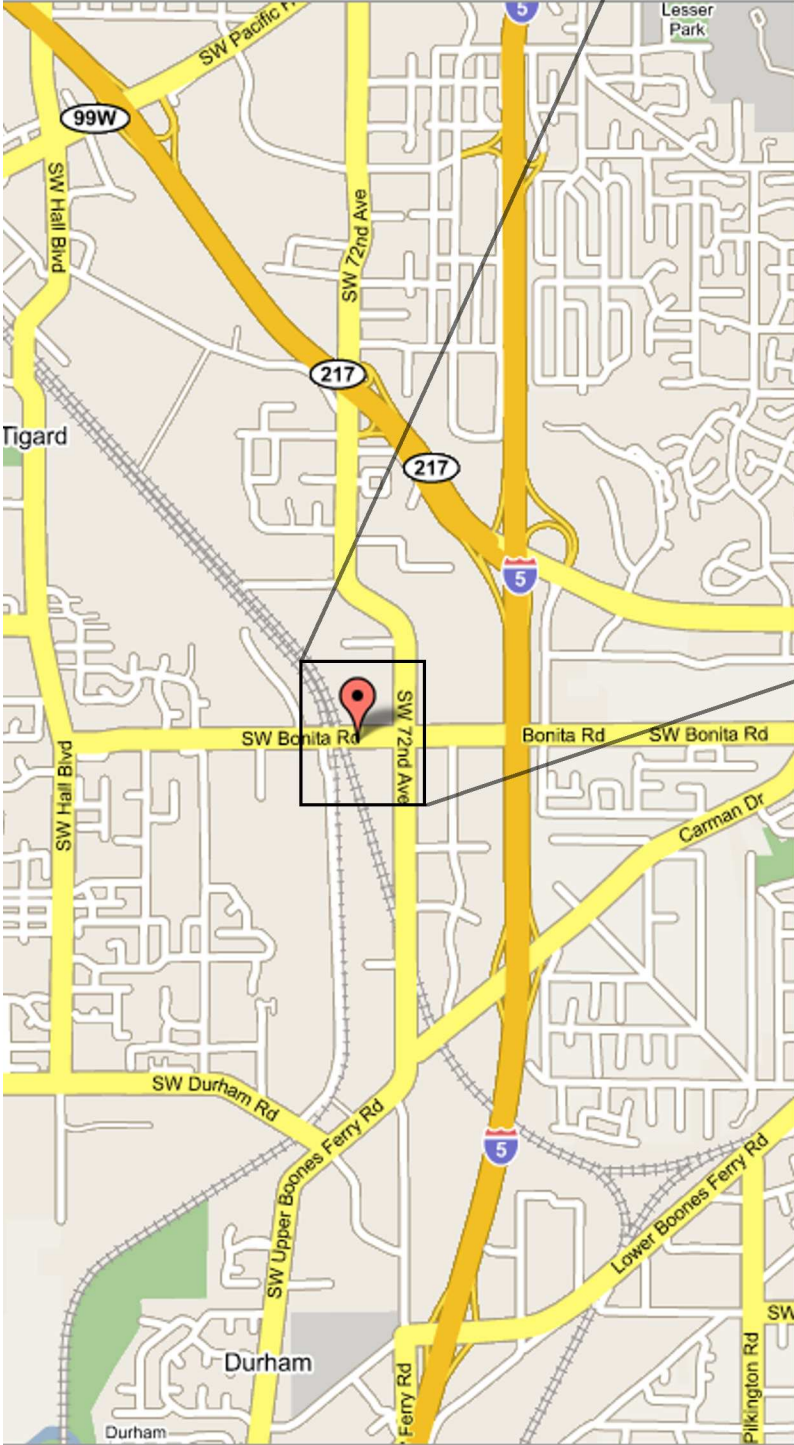




# A & G PRODUCTS

Saturday, January 14th, 2006, 1:00 pm.

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

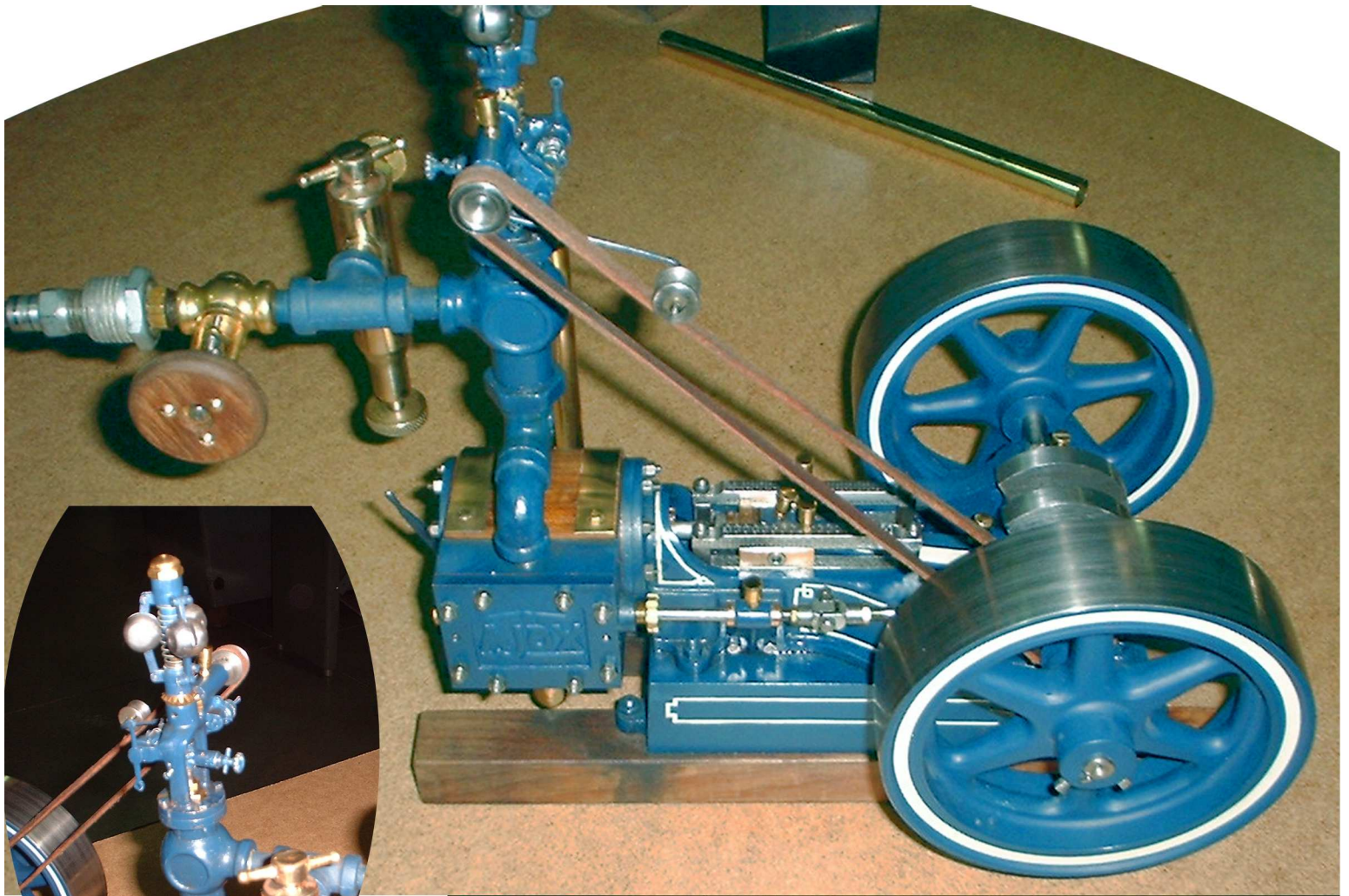


### Directions to Grant's

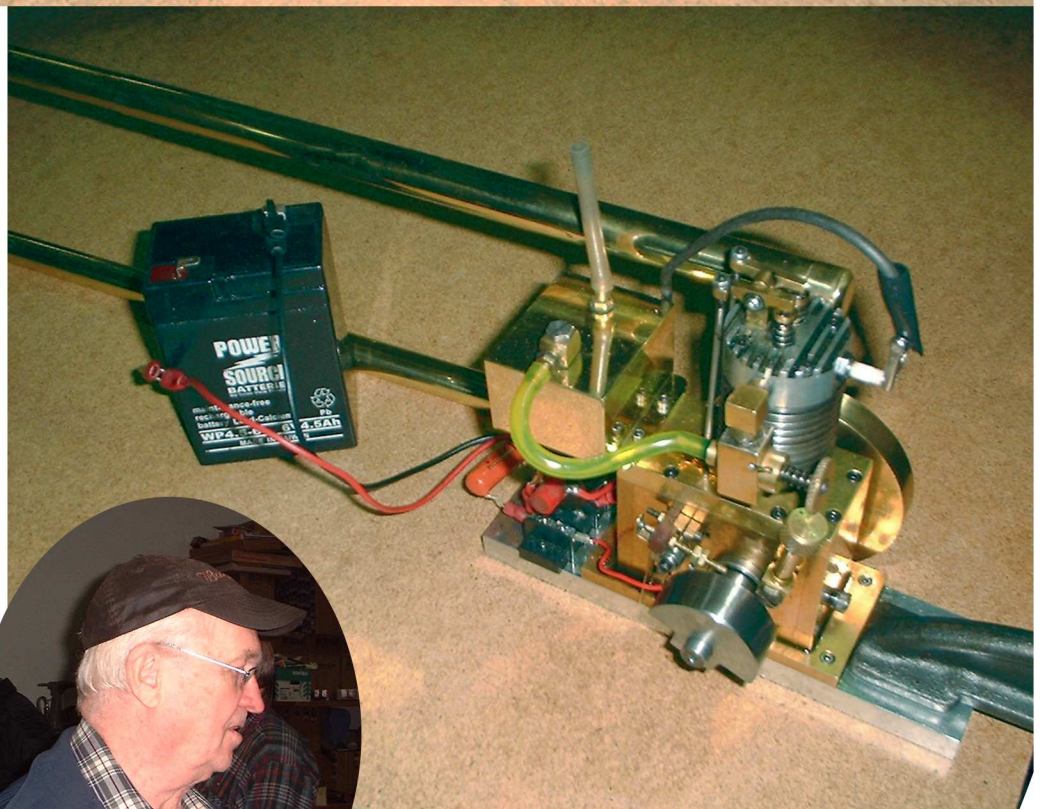
**From I-5:**  
Use exit 292 to Hwy 217, go north about 1/4 mile toward Beaverton to SW 72nd exit. Turn left onto SW 72nd Ave, go about 3/4 mile to Bonita Road, turn right. A & G will be on your left.

**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.





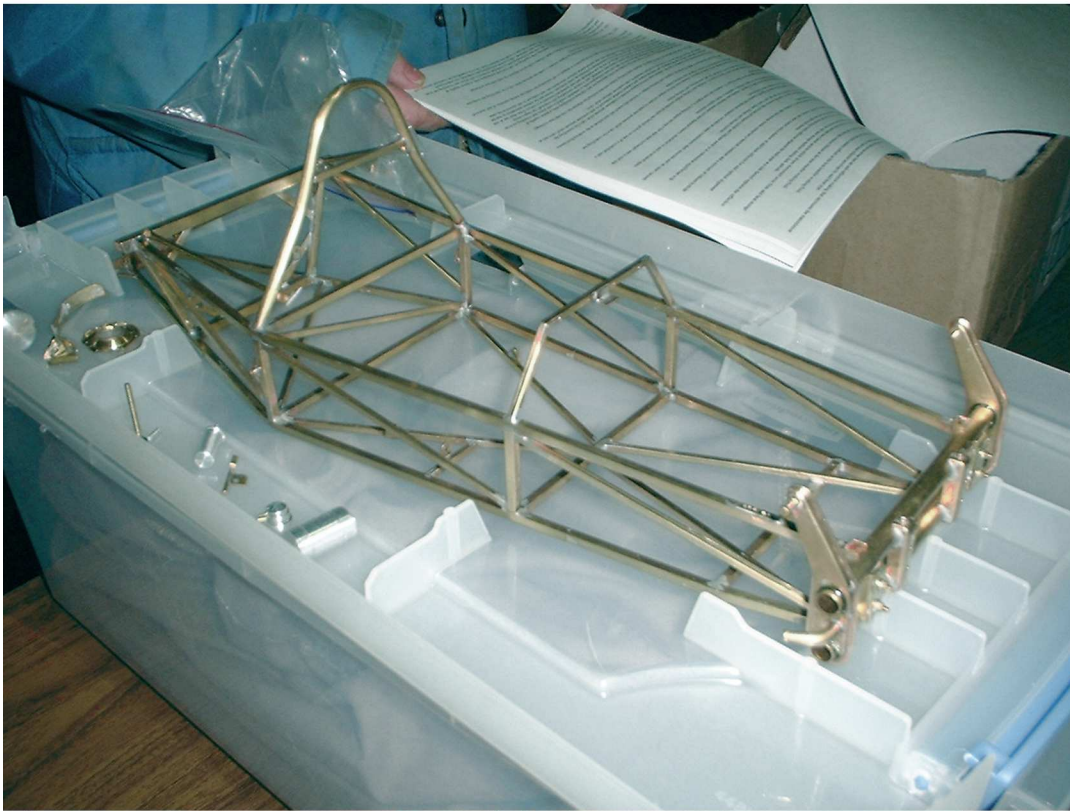
**Mel Farrington** brought a modified steam engine from Tiny Power kits. Known as the Ajax steam engine (above), the governor was his own addition to the six month project. Very nice work!



**Virgil Jeffries** (below) demonstrated his Upshur vertical 4 stroke. The length of "trombone" attached to the exhaust port could be varied to show its effect on performance.







A 1/8 scale Formula V chassis was started by **Sheridan Fahnestock** (above) after finding a lack of options in this area. It is mostly comprised of brass stock due to its ready availability at this scale.



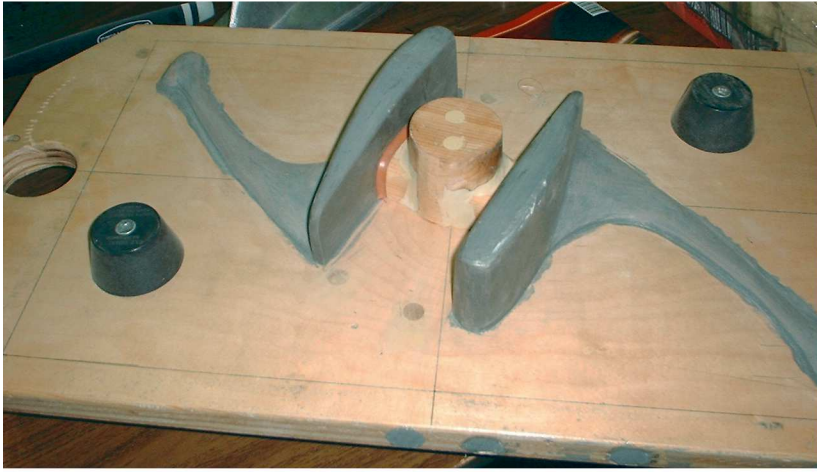
**Dave Carr** described a conversion project he and **Jim Pfaltzgraff** worked on. They modified stock Shindaiwa 2510's (from a hedge trimmer) for 1/4 scale flying boat use in push-pull configuration. This saved \$500/engine over a hobby-grade engine (lower left).



**Hal May** (below) showed the inner workings for some interesting clocks.



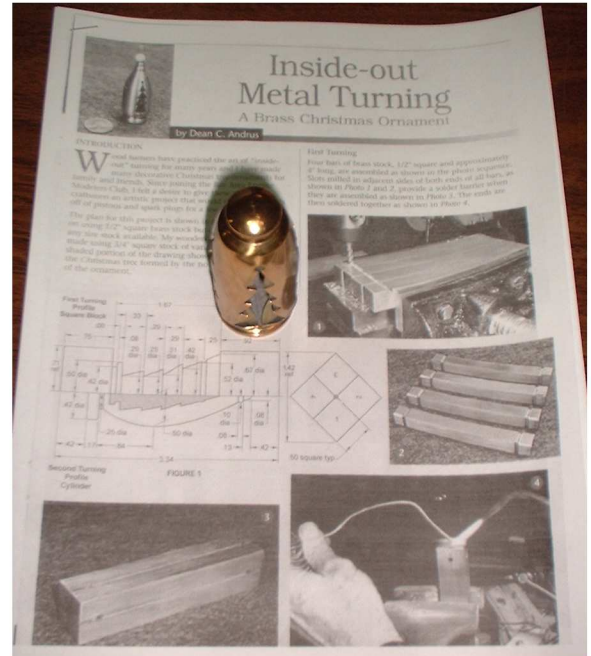




Two match plates were also presented. The first by **Gary Martin** (upper left) is the base for a model airplane. The second by **Tom Hammond** (lower left) is the stroke arm for his hand-powered shaper.



A tree ornament was shown by **Gary Hart** (below) demonstrating his lathe skill. Just in time for Christmas.



Finally, a short business meeting was held to elect officers for the 2006 calendar year. They are shown here left to right. On a voice vote, which was unanimous, Greg Dermer was elected President and Pat Wicker is acting Vice President (until a replacement can be found). Bud Statton continues as Secretary/Treasurer; Bill Miller as Member-at-Large and Carl Petterson to handle membership dues. In addition, Jarod Eells assumed responsibility for producing the monthly newsletter from Bob Diffely.

Congratulations to the new officers and a big thanks to those who have served in the past!

Please consider taking on the Vice President role. See Pat Wicker or Carl Petterson for more details.