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**Last Month's Meeting** was at **Paul and Sharon Lawson's** hanger in Vancouver, WA. And what a hanger. This one contained a 1909 Avery steam tractor, a 1951 Mack truck, a calliope, a shop, several old/antique autos and, of course, planes and plane supplies. But wait, there's also a private control tower with a panoramic view of the airport. What a place for collectors to meet. Many thanks to Paul and Sharon (pictured at right) for their generous hospitality.



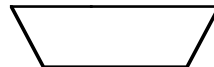
In addition to the showing of exceptional projects (shown in the following pages) a new set of key officers volunteered at this meeting: **Pat wicker** is the new president and **Carl Petterson** is the new vice president. Other officers remain the same. Thanks also go to the retiring officers: **Gary Martin** and **Bart Pond**. The **January meeting** is scheduled for 1 pm January 10th at **Bart Pond's**. See enclosed map for directions. The **SW Portland Model Engineers** met twice recently to test if there is enough interest in a small local group meeting. So far so good. Monthly meetings are tentatively planned for the fourth Saturdays. **Dave Francisco**, the keeper of the mailing list, thanks you for your timely payments. For those paying in January, he suggests you mail to him or bring a **check** to the meeting for \$12. It is easier to keep track of those who paid with a check. He won't, however, turn away cash payments.

## For the Beginner # 11

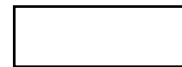
### PRINCIPALS OF CUTTING METAL

In machining operations, the tool material rotates or moves in a straight line or the work piece rotates or moves. The tool must be made to move into the work material to cut a chip. This is called feed. The amount of machine feed controls the thickness of the chip. Besides the use of single point tools with one cutting edge, as they are called in lathe, shaper, and planer operations, there are multiple point tools such as milling machine cutters, drill, and reamers.

An important aspect of the cutting tool is the angle of rake. Looking at the side of the tool this is the undercutting or lack of undercutting of the tool. Positive and negative rake have different effects on the chip and surface finish. Zero and negative rake tools are stronger and have longer working life than positive rake. Negative rake tools produce poor finishes at low cutting speeds, but give a good finish at higher speeds. Positive rake tools are freer cutting at low speeds and can produce good finishes when they are properly sharpened.



POS



NEG

A common misconception is that material splits ahead of the tool as wood does when it is being split. This is not true with metal; the metal is sheared off and does not split ahead of the chip. The metal is forced along in the direction of the cut and the grains are elongated and distorted ahead of the tool. The surface is disrupted more with the tool having the negative rake than with the tool with the positive rake. Higher speeds give better surface finishes.

Wes Ramsey

#### Meeting Schedule

All Following Subject to Change: **February 14:** Mesher Tool, NW Portland, **March 13:** Paul Pierce Antique computer collection, NE Portland.

**Classified** from Wes Ramsey 723-5642:

- >>> For sale: 10" Craftsman Radial saw with stand.
- >>> Lincoln gas powered welder on wheeled cart.
- >>> Small engine repair class starts at Mt Hood CC Jan. 5 2004. Senior discount gets you in for only \$5.00.

#### GEARS Honor List:

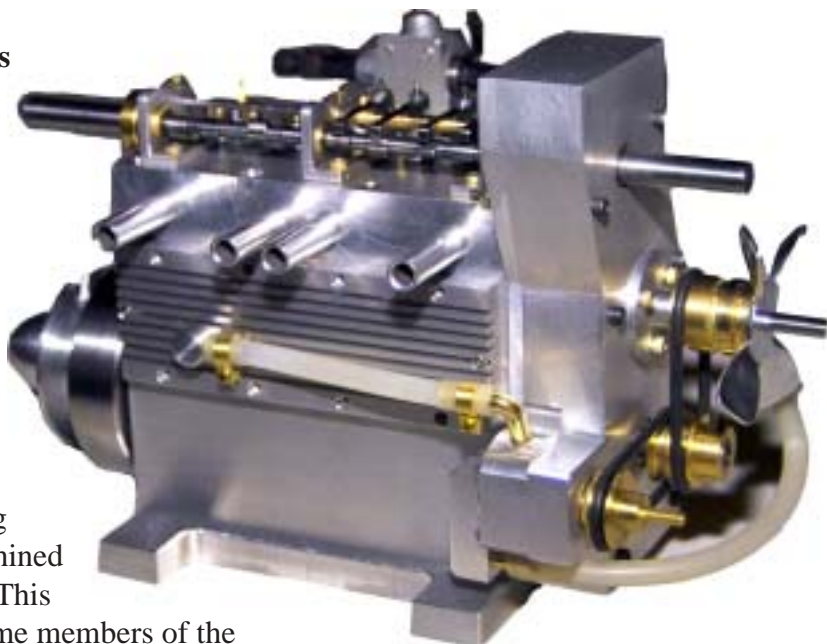
PME			
Doug Auburg	Henry Casson	Chuck Clark	Dave Francisco
Leroy W. Johnson	Bill Miller	Alan Painter	

Other clubs		
Larry Gavin	Wayne Esauk	Mel Hoffman

Thanks,  
Pat Wicker

And look at these projects. At right is **Bob Eaton's** four cylinder gas engine. This month has Bob completing the cooling system. Immediately below is an all aluminum light weight Quorn built

by **Tom Hammond** for **Gary Martin** to take to shows to demonstrate the castings he sells. The lower left hand corner shows **Gary Hart's** 1911 Simplex engine while the lower right shows a generator being designed, cast and machined by **Richard Williams**. This is a collaboration of some members of the Mid Valley Model Engineers club.

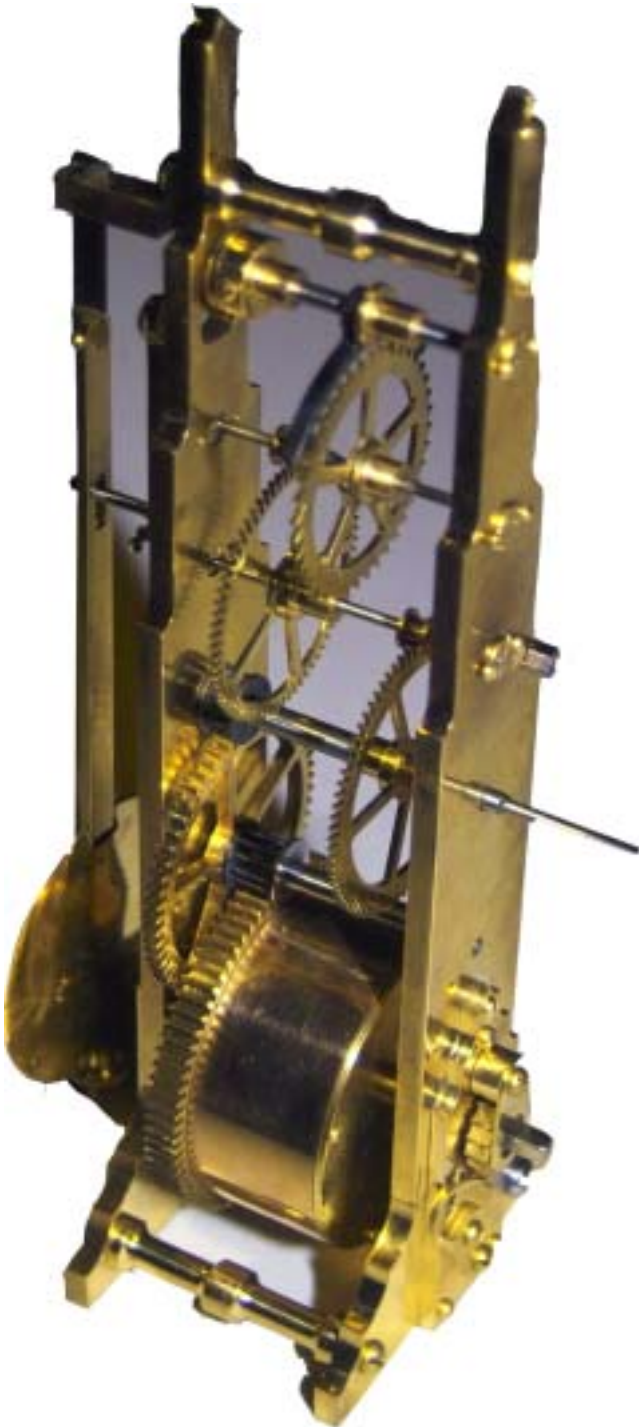




**Steve Hampson** (above) demonstrates the digital readout display that he can construct and sell in low volumes. It has multiple functions, attaches to your digital calipers and results in a large easy to read display.

**Grant Carson** brought the crankcase (shown upper left) for the nine cylinder radial engine he is constructing.

Meanwhile, **Hal May** continues work on his third clock (shown at left). This is to be a Christmas present for one of his daughters but Hal didn't say which Christmas. Below is shown a brass cast-iron displayed by **Gary Martin**. Someone will be happy to receive this as a gift although it doesn't sound very melodic.





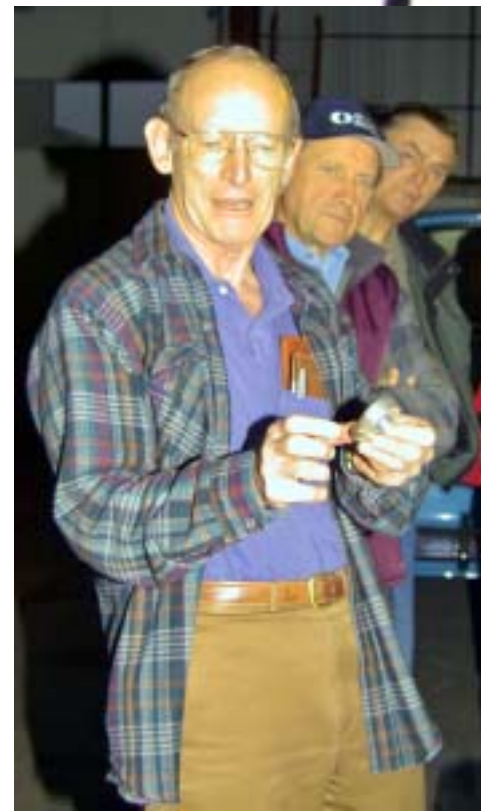
Above is a sine plane recently scraped by **Jim Pfaltzgraff** (shown in the inset) using the modified power file shown. Jim constructed his own scraper bit which he inserted into the power file thus making a power scraper. Jim says this makes exacting work much easier than hand scraping.

**Bob Eaton** (left) describes the progress he is making on his four cylinder in line gas engine.

Below left is one of Paul and Sharon's planes being admired by club members.

Below right is a close up of part of the calliope under repair by **Paul Lawson**.

At right, **Tom Hammond** describes the features of the light weight Quorn he built.



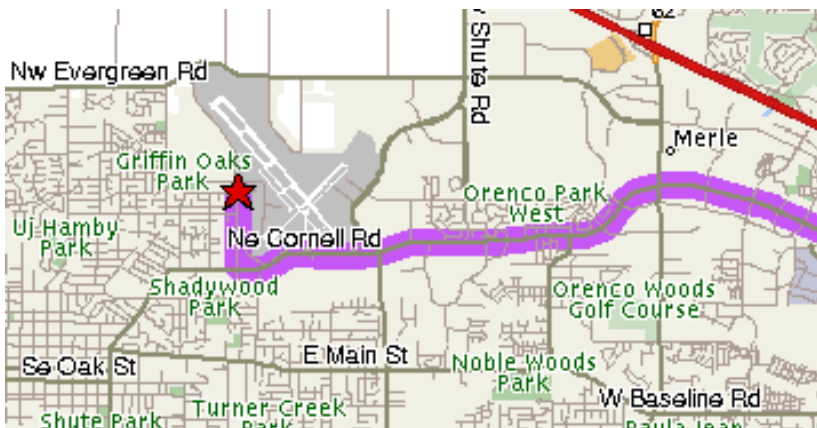
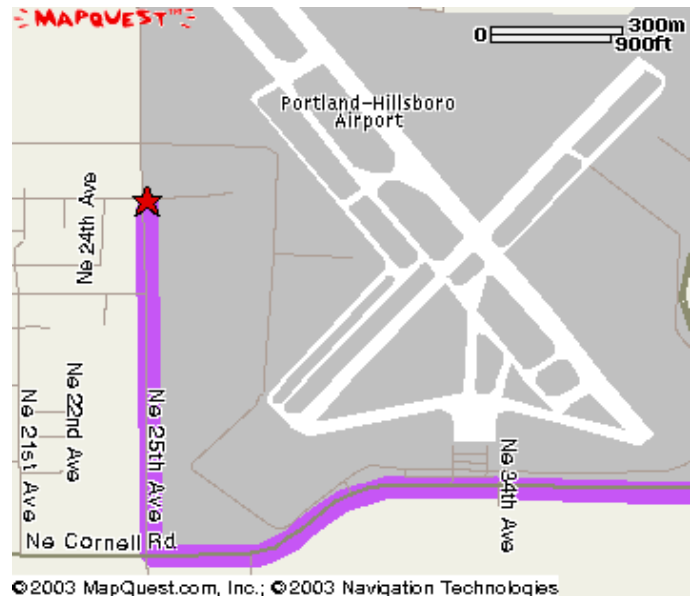
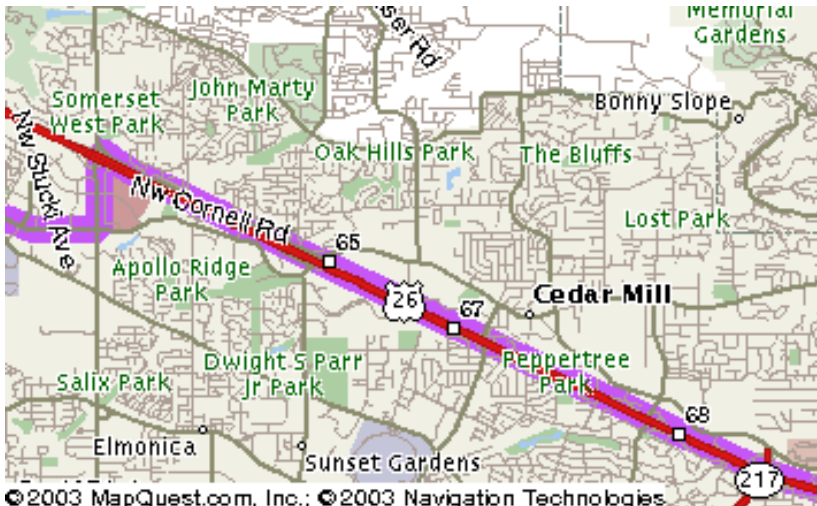


**Directions to Bartlett's  
1900 NE 25th Ave. Hillsboro**

From Mapquest

1. From US-26 West bound from Portland 1405 toward BEAVERTON travel 9.66 miles.
  2. Take the 185TH AVE. exit- exit number 64- toward ROCK CR. Travel 0.29 miles
  3. Turn LEFT onto NW 185TH AVE. Travel 0.58 miles
  4. Turn RIGHT onto NW CORNELL RD. Travel 4.61 miles
  5. Turn RIGHT onto NE 25TH AVE Travel 0.57 miles
  6. Turn right into parking area. Travel 2 blocks and park in right hand lot.
- Total Distance: 16 miles

**GPS 45.538812, 122.956887 or  
45 32.329, 122 57.413**



**President's Corner:**

We have had 2 very good years with Gary Martin as President and Bart Pond as Vice President. I am sure we all appreciate the efforts they put forth so take the time at the next meeting to personally shake their hands and thank them.

I also want to thank all of the other members of the board for agreeing to fill their positions for another year. The success of the club depends on efforts of these craftsmen.

We have kicked off the fund raising for the Gas Engines and Antique Reproductions Show (GEARS). To date we have only collected a little over \$700 so we have a long way to go. I know that with the holidays it can be tough to scrap up a donation but this is for a good cause and I would sure like to be able to brag to the other clubs that PME had 100% participation. An idea for you to consider is to clean out your shop and bring things to the meeting that we can auction off and then donate the money to GEARS. This is a way for you to make a donation to a good cause and make some room in your shop. If you wish to send in a check please send it to:

Oregon Home Machinist  
c/oPat Wicker  
20540 SW Kawanda Ct  
Tualatin,OR97062

See you at the club meeting in January.