

| METRO DETROIT METALWORKING CLUB | | | | JUNE '07 | |
|---|-----------------|------------------|--|----------|--|
| Beginning balance | \$536.96 | President | John Osborne | | |
| 2006 dues income | | V. President | Emil Cafarelli | | |
| Non-dues income | | Treasurer | Ken Hunt | | |
| New balance | \$536.96 | Editor/Librarian | James Howard | | |
| Expenses | -\$0.00 | Publisher | John Lee | | |
| Total on deposit | \$536.96 | Webmaster | Dan Hittenmark | | |
| DUES: \$10/yr. check to MDMC c/o Ken Hunt, | | | Macomb Community College 14500 E 12 Mile Rd, Warren, MI Room T-142 (parking off Martin Rd East of Bunert Rd Next meeting: June 13, 2007 (2nd Wed of every month) | | |
| | | | | | |

PRESIDENT'S MESSAGE First things first: I formally apologize to Emil for saying certain kinds of engines are not heat engines – it turns out almost everything is. The picture to the right that shows an engine made entirely of wood that Joe Pietsch found started the discussion. According to the Wikipedia: “A *heat engine* is a physical or theoretical device that converts thermal energy to mechanical output. The mechanical output is called work, and the thermal energy input is called heat. Heat engines typically run on a specific thermodynamic cycle. Heat engines are often named after the thermodynamic cycle they are modeled by. They often pick up alternate names, such as gasoline/petrol, turbine, or steam engines. Heat engines can generate heat inside the engine itself or it can absorb heat from an external source. Heat engines can be open to the atmospheric air or sealed and closed off to the outside (Open or closed cycle). In engineering and thermodynamics, a *heat engine* performs the conversion of heat energy to mechanical work by exploiting the temperature gradient between a hot "source" and a cold "sink". Heat is transferred from the source, through the "working body" of the engine, to the sink, and in this process some of the heat is converted into work by exploiting the properties of a working substance (usually a gas or liquid).” So Emil was right and I was wrong. I would feel bad about it except that the study of thermodynamics looks fascinating. Rocket engines and refrigerators (heat engines that are reversible) are heat engines. The classifications are complex; some engines are not yet classified. Working fluids can be gasses, liquids or even electrons. There are thermal-acoustic engines. Some have no moving parts. Hurricanes, tornadoes and storms are heat engines.

Next issue: I can't make the next meeting, I will be at the CNC Workshop in Illinois, along with Don Foren and Rick Chownyk. Rick and Don are going to teach and demo, I am going to learn.



MINUTES Meeting was called to order at 7:40 pm by the president, John Osborne. Ken Hunt specified the treasury balance as \$506.

Two individuals, Ray Cavell of Brighton, a potential member, and David Krebs of Harper Woods, a new member, introduced themselves to the membership.

Joe Pietsch read parts of an article in Gas Engine Magazine of a working, operational engine made entirely of wood. Robust discussion of the technology required followed the reading.

Bert Campbell demonstrated a home-built boring bar modified to cut balls onto the end of a turning shaft.

Ron Grimes demonstrated a rotary table from and announced his purchase of the complete Sherline Products Miniature Machine Shop. It was purchased at the North American Miniature Engineering Society Show in Toledo, OH, in April. It is fully N/C controlled. Ron is building a miniature of the Henry Ford Museum belt-driven machine shop, to be powered by its own steam engine. A formidable task, indeed!

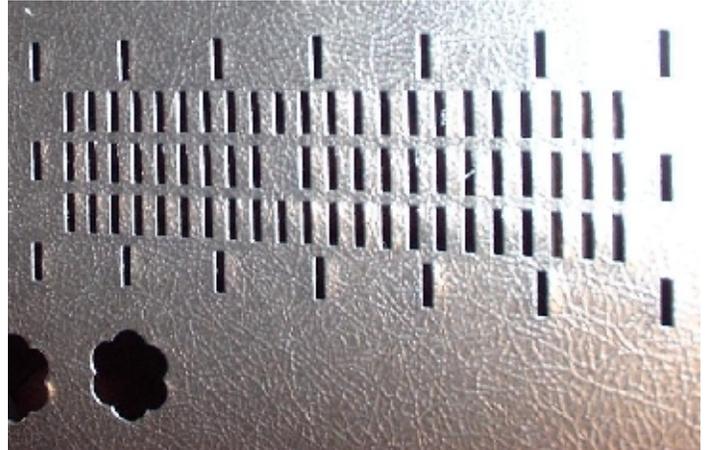
Karl Gross demonstrated his appropriately named hit and miss engine, developed from an article in a 1995 Home Shop Mechanics Magazine.

Mark Nowakowski presented a flysheet from Lee Valley and Veritas, a Canadian hand tools vendor, X800 871 8158, www.leevalley.com, indicating the availability of a complete set of repair parts for the Yankee screwdrivers. He also indicated that the flysheet from Lee Valley had some errors in it relative to part number compatibility and that the corrected version was available at the Lee Valley website.

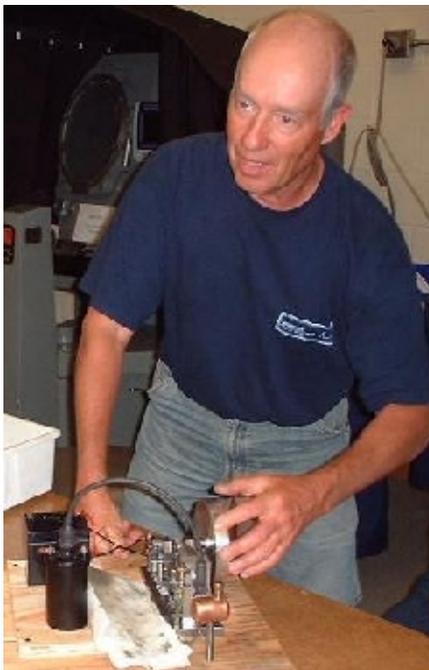
Adam Hermann demonstrated a wick for an alcohol lamp made from cotton bakery string, which he had found to be perfect for the application.



This is **Bert Campbell's** ball making attachment to his lathe. It mounts in his quick-change tool post. The handle simple moves a boring head (which is not modified and can be used as originally intended).



Your president has finally finished the CNC punch! This is a test piece, which was punched in about 28 seconds at a rate of about 3 punches per second. Its fun to watch.



Karl Gross showed his hit and miss engine in operation. It is called that because the ignition is cut off when the engine exceeds a set speed. (It's a heat engine, I know that now, Emil).



No, I did not build a coffin; it's the shipping crate for sending the punch to the Philippines. I would have brought the punch to the Club except that its 16 feet long and weighs 800 pounds, but it comes apart and fits in this box.



Ron Grimes showed us the rotary table that is part of his Sherline CNC setup.