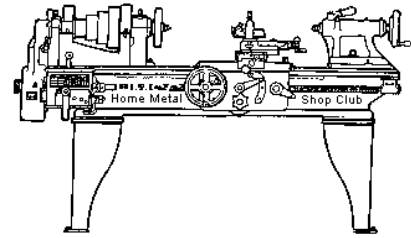




October 2016
Newsletter

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<http://www.homemetalshopclub.org/>

The Home Metal Shop Club has brought together metal workers from all over the Southeast Texas area since its founding by [John Korman in 1996](#).

Our members' interests include Model Engineering, Casting, Blacksmithing, Gunsmithing, Sheet Metal Fabrication, Robotics, CNC, Welding, Metal Art, and others. Members enjoy getting together and talking about their craft and shops. Shops range from full machine shops to those limited to a bench vise and hacksaw.

If you like to make things, run metal working machines, or just talk about tools, this is your place. Meetings generally consist of **general announcements**, an **extended presentation** with Q&A, a **safety moment, show and tell** where attendees share their work and experiences, and **problems and solutions** where attendees can get answers to their questions or describe how they approached a problem. The meeting ends with **free discussion** and a **novice group** activity, where metal working techniques are demonstrated on a small lathe, grinders, and other metal shop equipment.

President <i>Brian Alley</i>	Vice President <i>Ray Thompson</i>	Secretary <i>Joe Sybille</i>	Treasurer <i>Emmett Carstens</i>	Librarian <i>Ray Thompson</i>
Webmaster/Editor <i>Dick Kostelnicek</i>	Photographer <i>Jan Rowland</i>	CNC SIG <i>Martin Kennedy</i>	Casting SIG <i>Tom Moore</i>	Novice SIG <i>John Cooper</i>

This newsletter is available as an electronic subscription from the front page of our [website](#). We currently have over 1035 subscribers located all over the world.

About the Upcoming November 2016 Meeting

The next general meeting will be held on 12 November at 12:00 P.M. (Noon) at [Parker Williams Library](#). Norm Berls will give an interactive presentation on using [SKETCHUP](#) as a 3D modeling and drawing computer application.

Visit our [website](#) for up-to-the-minute details, date, location maps, and presentation topic for the next meeting.

General Announcements

[Videos of recent meetings](#) can be viewed on the HMSC website.

The HMSC has a large library of metal shop related books and videos available for members to check out at each meeting. These books can be quite costly and are not usually available at local public libraries. Access to the library is one of the many benefits of club membership. The club has funds to purchase new books for the library. If you have suggestions, contact the [Librarian Ray Thompson](#).

We need more articles for the monthly newsletter! If you would like to write an article, or would like to discuss writing an article, please contact the [Webmaster Dick Kostelnicek](#). Think about your last project. Was it a success, with perhaps a few 'uh ohs' along the way? If so, others would like to read about it. And, as a reward for providing an article, you'll receive a free year's membership the next renewal cycle!

Ideas for programs at our monthly meeting are always welcomed. If you have an idea for a meeting topic, or if you know someone that could make a presentation, please contact [Vice-President Ray Thompson](#).

Reminder: Yearly club dues were due at the September meeting. Dues are fifteen dollars (\$15.00) and payable to Treasurer Emmett Carstens. He will accept cash or a check made payable to him.

Recap of the 08 October 2016 General Meeting

By Joe Sybille, with photos by Jan Rowland



Seventeen (17) members, including one new member, Richard Douglas, attended the 12:00 P.M. (Noon) meeting at the Parker Williams Library, 10851 Scarsdale Blvd., Suite 510, Houston, TX 77089. Welcome to the club Richard. There were no visitors at the meeting today. There are forty-eight (48) members in good standing with the club. President *Brian Alley* (right photo) led the meeting.



Presentation

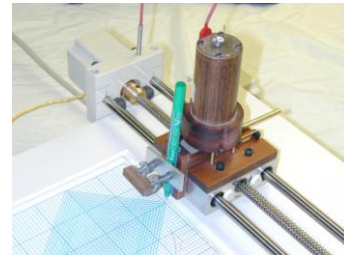
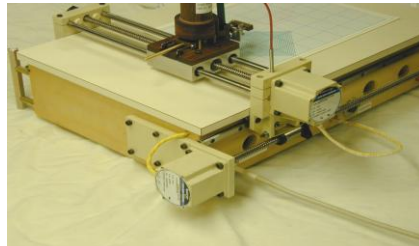
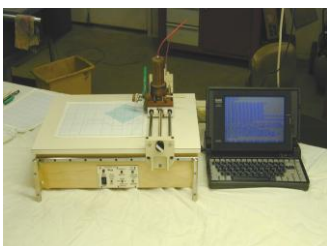
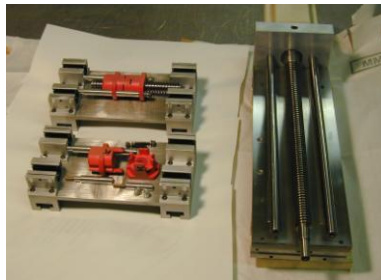
There were two presentations today. Member Jan Rowland talked about “The Stuff I Have Built Over the Ages”, followed by member Norm Berls’ discussion on the conceptual design of a “A Metal Polishing Jig for Small Parts”.



Jan is a retired organ builder. His specialty nowadays is the manufacture of stop knobs for organs. Jan receives requests for the stop knobs from organist all over the country, and this keeps him busy. Stop knobs are attached to mechanisms used to control the flow of air to pipes to produce organ sounds. Stop knobs are usually made from certain types of wood. To make the stops, Jan designed and built a lathe to automate the building process. Automated commercial lathes were more suited to metal working than to wood working. Additionally, he wrote (in Basic computer language) the software routines to control the movement of the carriage with tool post and cutters, as well as the movement of the tailstock. For his prototype, Jan designed and built the motor controller and power supply to control the stepper motors for his lathe. For his subsequent build, Jan used a commercially designed and built motor controller and power supply. The lathe design is a work of art. Its operation is relatively simple, considering the complex shapes of the stop knobs it produces.

Jan also designed and built a plotter. Two stepper motors provide the motive force for the two carriages. A separate motor controls the movement of the plotter pen. As with the lathe, Jan wrote in the Basic computer language the software routines to control the movement of the carriages and the vertical movement of the plotter pen.

A few pictures of Jan’s organ pull stops, his lathe and plotter are shown below. A video of the lathe’s operation can be [viewed at this link](#).





Member Norm Berls gave a presentation on his concept of a small part metal polishing jig. The jig has a wooden base topped with a metal framework to hold both the abrasive medium and the item to polish. Using C-clamps, one may clamp the base to a convenient spot on the workbench. A sheet of abrasive medium may be affixed to the lower part of the metal framework. Shelf extensions, which force the medium into slots on both sides of the metal framework, may be loosened and retightened to facilitate positioning of unworn medium.

The item undergoing polishing is held fast by a clamp on a horizontal slide assembly above the abrasive medium. Atop the clamp holding the item is a wooden block whereby one moves by hand the block back on forth along the slide assembly. Positioning pin holes facilitate the placement of the slide assembly for different sized items undergoing polishing.

Norm's slide presentation may be [viewed at this link](#).

Safety Moment

A member cautioned to be extremely careful when casting aluminum or lead. Ensure that no water is present in the feed material, for the slightest amount of moisture trapped under high heat will cause a violent release of molten metal.

Show and Tell



Bill Berry showed an articulated knuckle that he made for wood turning the inside of a small mouthed vessel (photo at left).

Stan Reeves made a tool holder for belt sanding (photo at right).



Problems and Solutions

A member has a polishing machine. In operation, the rotor with integral bearing strikes the motor stator. The member wanted to know what he could do to resolve the problem of the wobbling rotor. Several suggestions were offered.

Another member has tried unsuccessfully to measure the internal thread pitch of a thin nut. His thread gauge offers little help. Upon inspection, one member pointed out that it was a left hand thread and trying to thread the nut onto a common bolt would be in vain.

Articles

Mounting Small Parts Square on the Lathe

By *Martin Kennedy*

To make sure that a part is mounted square on the lathe, you usually grip it with a sufficient length of the jaws or tap it so that it is flush with the face of the chuck. But there are times when the part is thin and this method does not work. Here's how to clamp the part in the jaws while making sure that it's perfectly square.

The easiest way to do this is to use a Chuck Stop, or Chuck Spider (photo on the right). These include magnets to adhere them to the chuck face. They are easy to use, and can't fly off the chuck when rotating. Unfortunately, they're \$100+ for a set of three widths.

You can make a set of these yourself, if you have stock of adequate size. There are several internet pages and videos showing you how to do this.



Or, you can do it the inexpensive way! I use milling parallels on my lathe. I have the type with holes in them. The left picture shows how they fit on the four-jaw chuck. This method also works on the three-jaw chucks. When the parallels have holes like the ones in the picture, you can leave them on the lathe during cutting. There is a bolt through the hole so that they can't be slung off the chuck when it's rotating. For extra safety, use a lock nut or remove them after aligning the part. I get the nut snug, but not tight, since that will bend the parallels. I run the lathe at slower speeds, and don't stand in the path of the parallels, just in case.

I have parallels of different widths, so that I can select the ones that allow the stock to be proud of the jaws, while clamping the maximum amount possible. The largest parallels I use for this result in a clamp overlap of only about 1/8 inch. For this minimal amount of clamping, it's important to only take small cuts to reduce

forces on the stock.

After I get the piece more or less centered in the four jaw, I use a small soft face hammer to tap the piece up against the parallel, just as you would do with a milling vice.

I've also used parallels without holes to set up the piece. **DO NOT RUN THE LATHE WITH THIS TYPE OF PARALLEL IN PLACE!** Be sure to remove them after the stock is clamped in the jaws.

Here's a picture of the stock in place. I'm using the dial indicator to get it centered. The parallels are in place. The photo shows another trick – use some thin cardboard (or thin strips of aluminum) between the lathe jaws and the stock to reduce or prevent marring the surface of the stock.

Still another trick, not shown here, is to get the part roughly centered with the chuck sitting horizontally on your workbench, and not yet attached to the lathe. This lets gravity work in your favor when trying to hold all the various pieces in place while you're making the initial adjustment and tightening the chuck jaws. After the chuck is mounted on the lathe, you can move it around with very small adjustments so that the parts don't fall out. You may also want to put something like a piece of cardboard on the ways underneath the chuck so that if (or when) your parallels fall out they don't get damaged.

