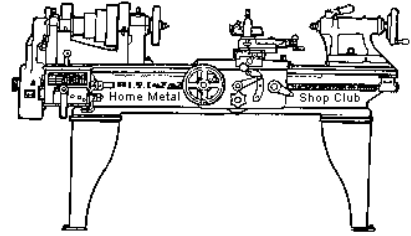




September 2020

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.

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Brian Alley

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CNC SIG
Martin Kennedy

Casting SIG
Tom Moore

Novice SIG
John Cooper

This newsletter is available as an electronic subscription from the front page of our [website](#). We currently have over 1027 subscribers located all over the world.

About the Upcoming 10 October 2020 Meeting

The next general meeting will be held on 10 October 2020 at 1:00 P. M. on-line at Zoom.us. A new segment to the meeting, 'Live from the Home Shop' will be inaugurated by member Martin Kennedy. He will demonstrate 'Hints For and Use of Lathe Chucks'. A video from June, 2004 of Don Foster's Steam Engines (1:23:24) will be shown. Currently, we are holding Zoom meetings only for those residing in the Houston, Texas area. In the future, we may open the monthly meeting to all newsletter subscribers, if Zoom provides for a manageable meeting forum.

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.

Members are requested to submit to the club secretary the name, address, telephone number, and website address, if any, of any metal or other material stock supplier with whom the member has had any favorable dealings. A listing of the suppliers will appear on the homepage of the club website. Suppliers will be added from time to time as appropriate.

The club is looking for a member to serve as webmaster. After over ten years of service, our current webmaster would like to pass the webmaster torch to a successor.

Recap of the 12 September 2020 General Meeting

By Joe Sybille



Fourteen participants attended the 1:00 P.M. virtual meeting.. There were no visitors. President-emeritus. Vance Burns, led the meeting.

At this time there are no plans to resume in person meetings until the Covid-19 Virus situation is resolved by vaccination or other safe means.

Presentation



Club member, Phil Lipoma, gave a presentation on progress made to date on the building of a model **Corliss Steam Engine**. Years ago, Corliss engines were used as stationary engines to provide mechanical power to line shafting in factories, machine shops, mills, and many businesses where there was a requirement for rotating equipment to accomplish a task.

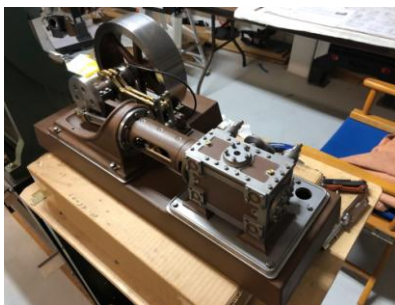
Lipoma has spent about three hours a day for about a year working on the engine. At about ninety percent complete, he showed drawings used for building the model.

There were eighteen drawings (18"x24" sheets) with details of every part of the engine. According to Lipoma, constructing the engine has tested every one of his machining skills. Several parts such as the flywheel, bearing pedestals, governor, and cylinder were made from purchased castings. Other parts were scratch built from 12L14 steel.

The cylinder has a 1 ¼" bore. Friction between the cylinder wall and the piston was a concern. With the use of graphite to make the piston rings, Lipoma's goal for the piston fit was a 'close fit' is good enough. Testing has revealed the blow-by in the cylinder is within acceptable limits. The flywheel weighs between 20 pounds and 25 pounds. Machining the flywheel casting posed several challenges in that it was difficult to hold securely.

Making the valves posed a unique set of challenges. Lipoma made a fixture for valve hole patterns and imbedded strong magnets within the fixture to hold the parts in place.

Several views of the incomplete engine are shown below.



Safety Moment

A safety video emphasized the importance of the proper use of a ladder. The accident victim reached too far to the side, lost their balance, and fell several feet on to a glass merchandise display case. Injuries resulted from the fall.

Show and Tell

Gary Toll spoke about the use of Speer bullets to maintain his shooting skills. A line of Speer bullets are made from wax and are best shot from revolvers. Toll shoots make-shift targets in his garage.

Norm Berls showed a part of a cross slide he is making for his 9x20 Jet lathe. Berls is making the cross slide from 1018 steel. See photo at right



Problems and Solutions

A member requested suggestions on local sources for brushes for a motor in a string trimmer. Several suggestions were offered.

Articles

Setting Tension in a Band Saw Blade (Revisited)

By *Martin Kennedy*



Here is an update on my August 2011 HMSC article [Setting Tension in a Band Saw Blade](#) (see page 7). When I wrote it, I designed a gauge that would help in the measurement of the tension. The article had a lot of detail on calculating the desired blade stretch. The article concluded with me deciding to not build the gauge. Instead, I used a caliper to measure the stretch.

Since then, I purchased a 3D printer. I've used the printer to make several machine shop tools. I realized that I could build the original gauge as designed quite easily by printing it, instead of machining it. Using a caliper as shown in the article can be a bit 'fiddly', so I decided to 3D print the gauge. I had to revise the drawing somewhat to accommodate the gauge I had on hand.

When using the [spreadsheet](#) to calculate the desired gauge reading, you'll need to use 4" for the gauge length and 1.5 for the multiplier. For a bi-metal blade on my saw, that yields a target Gauge Reading of 0.005". I really had to tighten down on the band saw blade adjustment screw to get this tension.

Here are files associated with this project: [tension_calculator.xls](#), [band_saw_tensioner.pdf](#), [tension_gauge_arm.stl](#), and [tension_gauge_body.stl](#).

Notes:

I had several dial indicators available for use. They were all different sizes and lengths. The gauge holder has to be made for the specific indicator that you have. Mine required some cutouts around the circumference. Indicators with long stems / spindles can't be used because they may make the gauge holder longer than the saw throat.

I made a couple of knurled 10-24 screws to clamp the blade. The screws come to a point. I also put some set screws in the gauge from the back side. This is all to assure that the lever arm moves around the correct center. Moving around another point, such as the edge of the indicator arm will change the multiplier used and make the reading inaccurate.

If you need a modified version of the STL file for the 3D print because you're using a different gauge, there are STL editors available. If you'd like me to tweak the files, [email me](#). The easiest way to make changes is using the original Solidworks CAD file. Again, email me if you want it.