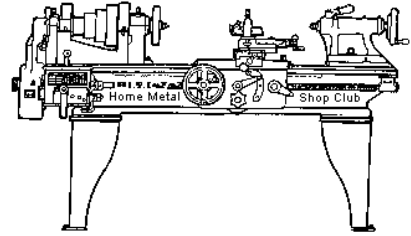




September 2018

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
Brian Alley

Vice President
Ray Thompson

Secretary
Joe Sybille

Treasurer
Emmett Carstens

Librarian
Ray Thompson

Webmaster/Editor
Dick Kostelnicek

Photographer
Jan Rowland

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 13 October 2018 Meeting

The next general meeting will be held on 13 October at 12:00 P.M. (Noon) in meeting room 'D' of the Parker Williams, Harris County Library, 10851 Scarsdale Boulevard, Houston, Texas 77089. Richard Douglas will give a presentation on Glass Production -Tulas Ford Glass Plant. 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 of \$15.00 were due at the September meeting. Treasurer Emmett Carstens will accept cash or a check made payable to him.

Members are requested to provide suggestions for general discussion on how the meetings should change, if at all, to increase interest.

The yearly tailgate sale date near the end of the year has not yet been determined.

Recap of the 08 September 2018 General Meeting

By Joe Sybille, with photos by Jan Rowland



Twenty members attended the 12:30 P.M. meeting at the South Houston Branch, Harris County Library, 607 Avenue A, South Houston, Texas 77587. There were no visitors in attendance. There are thirty-three members in good standing with the club. President Brian



Alley led the meeting (right photo).

Presentation

Club member Dick Kostelnicek gave a presentation on “Machining and Geodesics”. The general term geodesy is a branch of applied mathematics which, among other things, determines the shortest distance between two points, the path of least resistance, and the so-called natural path. Broadly speaking, the nexus between machining and geodesics can be found in how machines made before the era of WWII differ from those made afterwards. Metal working machines made before WWII were designed and built to follow geodesic paths. In general, geodesic paths required less force to shape a metal part and did so in the shortest time. Following these paths reduced wear on bearings and other machine parts. After WWII, as technology improved, the need to follow geodesic or natural paths became less significant. Today, bearings are stronger and resist wear better than those in use before WWII. With stronger bearings and widespread use of computational numerical control (CNC) of cutting tool paths, metal shapes produced today are more complex and machining of parts has become more versatile.



Presentation slides may be found [at this web link](#).

Safety Moment

President Brian Alley described how heated transmission fluid caused a small fire in a shop where he worked years ago. At the time, seals were softened by warming them in heated transmission fluid. Unattended heating of the transmission fluid exceeded the flashpoint of the fluid resulting in a fire that caused enough damage to warrant a change in workshop practices.

Another member spoke of an occasion whereby a candle melted sufficiently to overheat a saucer and cause it to fracture violently. As a result, flame from the candle spread resulting in extensive damage to a house.

Another member recalled an incident whereby a motorist drove over the discharge hose of a tank truck unloading diesel fuel into an underground tank at a petrol station. The wheel or wheels of the vehicle struck the discharge hose near the entrance to the underground tank filling port causing diesel fuel to spew onto an ignition source within the vehicle. A fire ensued. Fortunately, no personnel injuries were sustained, as both the motorist and the tank truck driver escaped the burning diesel fire.

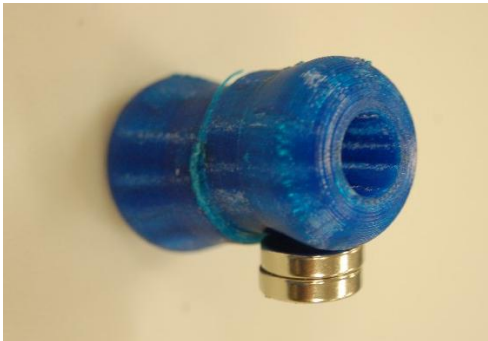
Show and Tell

Richard Douglas showed catalogs of KBC Tools and an electric motor repair manual that he purchased online. Also, he showed a picture of a vintage shaper he is restoring (right photo).



Martin Kennedy exhibited a tool he made to set accurately the elevation of a lathe tool bit (left photo).

Burnell Curtis displayed a tool identified during the meeting as a spindle nut socket (right photo).



Brian Alley showed holders for small neodymium magnets that he made on a 3D printer. Also, he showed a pendant he is developing from an Arduino board. See photos at left and right.



Problems and Solutions

A member shared his recent experience with a new Little Machine Shop mill. He experienced trouble keeping the mill's power on once he pushed the 'on' button. It turned out that the solution to the problem involved placing the spindle lock lever in the correct disengaged position. Unfortunately, the spindle lock lever can be placed in several positions, only one of which enables the mill's power to remain on once the 'on' button is pressed. According to a representative of Little Machine Shop the issue will be addressed in an upcoming revision of the user manual.

Another member revealed how he received from three different suppliers a sprocket with an eccentric shaft bore. He requested suggestions on the best way to correct the problem. Several suggestions were offered.

Articles

Pedestal Spot Welder

By Dick Kostelnicek



I use a spot welder to secure bent-up sheet metal drawers, chassis, and various electronic enclosures. Pictured at the left is a pedestal spot welder powered from 240 VAC that I made from parts readily available via the internet.

Aside from the home made welded pedestal there are four main items you'll need:

1. Portable hand operated spot welder available from Harbor Freight in a 240 or 120 VAC version (right picture).



2. Solid state relay SSR that electronically turns the 240 VAC power on and off to the spot welder (right picture). It has a high voltage AC switched output and a low voltage DC control input.



3. 12 VDC spot welder time control that turns on the solid state relay for a selectable number of milliseconds (default 50 – 500 ms.) (right picture). A timed period is electrically initiated by a micro switch that is activated by a foot pedal on the welder's pedestal stand (left picture).



4. 120/240 VAC to 12 VDC power supply (right picture) to power the timer and SSR.



For convenience, I also added an on/off main power switch and two 220 volt LED lamps. One lamp indicates whenever the welder is powered up and the other illuminates when welding is in progress.

Shown below are two Sketchup drawings of the pedestal stand.

