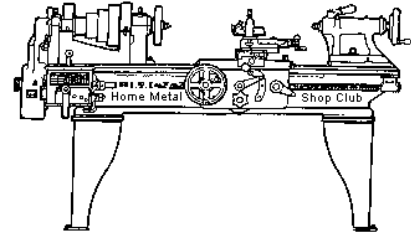




November 2019
Newsletter

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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>Gary Toll</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 1027 subscribers located all over the world.

About the Upcoming 14 December 2019 Meeting

The next general meeting will be held on 14 December at 1:00 P. M. at the Bayland Community Center, 6400 Bissonnet Street, Houston, Texas 77074. Norm Berls will deliver two presentations: "Animation Intensity" and "Single-Point Bottom Cutting"

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: Annual dues of \$15.00 were due at the September meeting. Treasurer Gary Toll will accept cash or a check made payable to him.

Free for the taking are several items for casting metal. The caveat is that one must arrive by truck and have at least three able bodied persons to haul away the equipment. Available items are as follows: sand muller and four buckets of sand, furnace blower, wooden pattern stand, crucible tongs, and one dozen metal flasks.

Recap of the 09 November 2019 General Meeting

By Joe Sybille, with photos by Jan Rowland

Seventeen members attended the 1:00 P.M. meeting at the Bayland Community Center, 6400 Bissonnet Street, Houston, Texas 77074. There were two visitors, Harvey Kriej and Carl Regone. There are twenty members in good standing with the club.

President Brian Alley led the meeting (right photo).



Presentation



Club member Dick Kostelnicek gave a demonstration of his model triple expansion engine. This type engine became popular in maritime service during the late 1880's. He discussed the evolution of steam engines beginning with the double acting, single cylinder engine. As the use of steam engines became widespread in the 19th century, single cylinder engines were superseded by those having two compound tandem cylinders where



steam successively expanded in two cylinders on the same shaft. Later, as technology of the time advanced, the introduction of three compound cylinders on a common crank shaft represented an improvement over tandem cylinders. Some of the problems with single and tandem cylinder engines were making them reversible and capable of starting from dead stop at any point in their revolution. The Stephenson Engineering Co. developed a valve gear mechanism to make multi cylinder engines reversible.

Single cylinder steam engines without expansion had an efficiency of about 20 percent. Those of the triple expansion type having a controlled steam cutoff that allowed the steam to expand in the cylinder had an efficiency of about 60 percent. It was determined that reciprocating steam engines were inefficient since heat used to convert water to steam without an accompanying temperature increase (latent heat) dissipated much of the energy from the fuel being burned. Consequently, the reciprocating steam engine in many applications was superseded by the more efficient steam turbine.

Kostelnicek built his model triple expansion engine from his own design and plans. It was built solely from readily available bar stock of cast iron, steel, bronze, and aluminum (no castings were used). During the demonstration, the model was run on air from a small air compressor. The level of detail is evident throughout the model.

Safety Moment

The safety video shown today emphasized the potential danger of gas cylinders. One must always exercise caution when handling gas cylinders, especially propane cylinders, since they have become ubiquitous in bar-b-que grills, patio heaters, and fire pits.

Show and Tell



Vance Burns exhibited a vise operated brake. This tool, sold by Grizzly Industrial, Inc., is used to bend steel bar stock up to ¼ inch thick and sheet metal. See left photo.

John Cooper gave an overview of *The Good of the Land Fest* that took place 26 October 2019 at 9:00 A.M. at the *Texas Early Days Tractor and Engine Association Show Grounds*, 1717 Eberhardt Road, Temple, Texas 76504. There were many exhibits on display depicting, among other things, restored farm implements, blacksmithing, metal casting, welding, machining, metrology, printing press operations, pottery, and antique tool restoration.

Richard Douglas showed a few tools he bought from a used tool market during his recent visit to South Carolina. He also displayed two replacement machine labels crafted by fellow club member *Brian Sande*. See photos below.



John Hoff discussed the success he has had recently with purchases of both metal and plastic stock. Local Houston area vendors he has used include the following suppliers:

Houston Southeast

Morris Scrap Metals
5706 Old Spanish Trail
Houston, TX 77023
713.926.3984 Source of: Steel

Houston North

Rose Steel
3610 Pinemont Drive
Houston, TX 77018
713.880.7088 or 1-800.460.1234 Source of: Steel, Aluminum

Texas Iron & Metal
865 Lockwood Drive
Houston, TX 77020
713.672.7595 Source of: Steel

Houston Southwest

Metal Supermarkets
10700 Corporate Drive, Unit 118
Stafford, TX 77477
832.939.4600 Source of: Steel

Professional Plastics
13823 N. Promenade Blvd.
Bldg 3, Suite 100
Stafford, TX 77477
877.216.7767 Source of: Plexiglas acrylic, Plastic sheets, Plastic rods, plastic tubing

Problems and Solutions

A member described the hazards of using 20% acidic acid to remove corrosion from a flashlight battery holder caused by a leaking alkaline battery. Initially, the member used 6% acidic acid to remove the corrosion but was dissatisfied with the results. He then soaked the part in 20% acidic acid for two days only to discover the stronger acid not only removed the corrosion, but it also dissolved the metal framework designed to hold the flashlight batteries. The lesson learned is to avoid soaking the corroded parts for too long when using the stronger acid.

Articles

A Key Dilemma

By Dick Kostelnicek



I pulled into my driveway and noticed that my wife had placed a garbage can in front the overhead garage door. That was her way of telling me to take the trash out to the curb before parking inside the garage. I got out of my 2011 Ford Ranger truck, closed the door carefully, and tried not to engage the lock. It was a hot day and I wanted to preserve the cool air conditioned interior of my vehicle. Returning to my truck, I found that the latch had indeed caught and the lock button was down. I was left standing outside of a locked, running truck sans door key. Fortunately, this occurred in my driveway. After calling my wife on my mobile phone, she came out of our house with her truck key to my rescue.

Today, I went to my favorite lock smith to get a spare key. I planned to hide it by tie wrapping it to the truck's undercarriage. The extra key would provide a means of gaining entry should I be locked out in a remote location. \$65 was the asking price! "This key a [transponder key](#) with a programmable chip inside", said the smith. But, I recently refurbished the door lock mechanism myself after someone tried to break in. It had no electrical connection; just mechanical parts, tumblers and a retaining clip. How could a key's chip communicate with an all mechanical lock mechanism?

Later, I was in my local home improvement center and passed a key making machine. I asked the attendant to make a spare key. He pushed it into the machine and after several computer screen messages flashed, he placed a key blank into the mechanism. Grind – grind went the machine. After checking out with a \$5 payment, I tried the new key in the truck door. It worked fine. Then I tried it in the ignition and found it would not start the engine.

So, there is a chip in the factory key! It will both open the door and run the vehicle. The replacement chip-less key opens the door but will not start the engine. Double GOOD! That means if someone finds my spare key, they can gain entry but can't drive off with my truck. The key point being.... we don't have to understand the technology as long as we comprehend its ramifications.