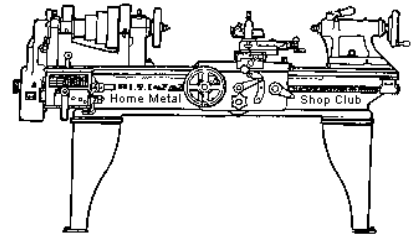




Home Metal Shop Club

November 2014
Newsletter
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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>Vance Burns</i>	Vice President <i>Norm Berls</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>Dennis Cranston</i>	Casting SIG <i>Tom Moore</i>	Novice SIG <i>Unfilled</i>

This newsletter is available as an electronic subscription from the front page of our [website](#). We currently have over 741 subscribers located all over the world.

About the Upcoming 13 December Meeting

The next general meeting will be held on 13 December at noon at the [Spring Branch Library](#), located at 930 Carbondale Street, Houston, TX 77024. John Hoff will give a presentation on Conversational Mill CNC Programming. Martin Kennedy will explain Parkerizing in the Home Shop.

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

General Announcements

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

The annual HMSC SWAP Meet was held on Saturday, 15 November 2014, from 9:00 AM until noon at 119 Jensen Drive, Houston, TX. Despite the cold weather, about 15 HMSC members and a few visitors braved the weather to snap up bargains on tooling

The HMSC has a large library of metal shop related books and videos available for members to check out at each meeting. The library is maintained by the [club Librarian Ray Thompson](#). These books can be quite expensive, 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](#).

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 'ugh ohs' along the way? If so, others would like to read about it. In the September 2012 HMSC board meeting, the board elected to waive membership fees during the next membership renewal cycle for those providing newsletter articles.

Ideas for programs at our monthly meeting are always welcome. If you have an idea for a meeting topic, or if you know someone who could make a presentation, please contact [Vice President Norm Berls](#).

All annual memberships expired on 1 September. Dues of \$15 for the next fiscal year are now overdue and should be paid to the treasurer Emmett Carstens. He will accept cash or a check made payable to him.

Recap of the 08 November 2014 General Meeting

By Joe Sybille, with photos by Jan Rowland



Nineteen members attended the noon meeting at the Galena Park Library, 1500 Keene Street, Galena Park, Texas 77547. Two visitors attended today, Norman Gouger and Brandon Harris.

President *Vance Burns* led the meeting. John Hoff's presentation on CNC Conversational Mill Programming has been rescheduled for the December meeting. Martin Kennedy will also talk about the use of Parkerizing in the home shop.



Presentation

Members and visitors watched a video depicting the tasks that a gunsmith during colonial times may have undertaken to make a flint stock rifle. The film began with the making of the barrel and the lock and concluded with the crafting of the stock. A typical rifle took approximately 300 hours to construct. Gunsmiths during this era were craftsman in every sense of the word. Not only were they good metal workers, but they were also skilled woodworkers. The stock, typically of maple, had to be shaped and fitted to the barrel and cut-outs made for the lock and trigger. Additionally, many of the gunsmiths produced their rifles with detailed engraving on the stock and the barrel. No two rifle engravings were alike. It is a testament to their skills both as craftsmen and artist that gunsmiths of the colonial era are admired today. And now we can see the etymology of the often recited saying "Lock, stock, and barrel".

Safety Moment

Vance Burns showed another video depicting unsafe work practices and reminded those present that one can never be too careful working in or out of the shop.

Joe Williams mentioned a worker who severed a second finger after getting medical treatment for severing the first one. This mishap occurred while cutting paneling.

Dan Harper told a story of a metro bus driver who was dismissed from service for getting into three accidents on his first day on the job.

Gary Toll shared an incident during which a gardener accidentally severed two fingers while trimming shrubs.

Show and Tell

Joe Williams showed a classic Browne and Sharpe screw pitch gage.



Tom Moore displayed die holders that are used with a ratcheting wrench (left photo). The modified socket wrench is fitted with a number 2 Morse taper to fit in the tail stock of Tom's lathe. To make internal threads, Tom fabricated a tap holder fitted with a number 2 Morse taper. Also, he showed a holder for a reamer (right photo) fitted with a number 2 Morse taper. This holder is used in either a lathe or mill.



Jan Rowland exhibited wall posters depicting equipment and examples of pipe organ draw knobs that he fabricates in a home brew CNC lathe.

Dan Harper shared with the group that the maker of Miller portable MIG welding machines has changed the design. The new models are lighter in weight and have a lower duty cycle than the earlier models.

Also, Dan mentioned that when it is necessary to thread to the bottom of a hole, a good way to do so without breaking the taps is to alternate using a plug tap and a bottom tap to thread to the bottom.

Joe Williams remarked that the use of higher quality taps would eliminate the chance of breakage while making internal threads.

Dick Kostelnicek showed a measured drawing of a heavy duty welded metal workbench that he designed and which he built along with Gene Rowan's welding skill.

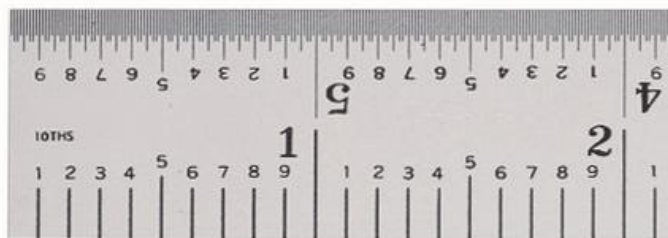
Problems and Solutions - *Ask the Blacksmith*

A member wanted to know the best way to repair a shaft-hub-spline connection in a tractor drive train. The connection had worn in a small arc of the hub, and he thought a repair was feasible. Recommendations revealed a repair would be difficult and likely unsatisfactory. Replacing the spline connection would be the best option.

Articles

Rules and Scales

By *Dick Kostelnicek*



Rule



Scale

A rule is a measuring stick with marked divisions that represent actual lengths defined by a standard organization such as NIST – [National Institute of Standards and Technology](http://www.nist.gov). A scale has divisions marked like a rule, but the actual intervals are either larger or smaller than the numbers indicate. Rules are used to make actual measurements while a scale is employed to enlarge or shrink a drawing or part. An oxymoron is the 'shrink rule', used in the lay-out of slightly enlarged sand patterns in order to compensate for shrinkage as a metal casting cools.

Duckboards

By *Martin Kennedy*

I have had rubber mats in front of my machines for several years. The mats allow for a more comfortable standing surface than the concrete floor. The disadvantage of rubber mats is that hot swarf melts into them, and I have to periodically pull it out with pliers. This is a particular problem on the lathe more so than the mill.

My neighbor had a stone floor installed recently. The stone was delivered in four large wooden crates made from $\frac{3}{4}$ " x 3" and $\frac{3}{4}$ " x 6" wood. Looking at all that scrap wood reminded me that I had recently seen some wooden mats, or [duckboards](#), in another machinist's shop. I was also familiar with them from commercial machine shops that I worked in and visited over the years. Although not quite as comfortable for standing as a rubber mat, the suspended wood has a slight spring to it, and is more comfortable than a concrete floor.



I asked my neighbor if I could have the crates. He was happy to get rid of them. I thought it would be an easy matter to disassemble them for the wood. I was wrong! Crates are assembled with air gun driven spiral nails, and you almost cannot get them out without destroying the wood. I ended up using a nail puller, and took them out one at a time. In hindsight, I would have bought the wood at a lumberyard! There are [several web and youtube pages](#) on disassembling the crates.

In contrast to disassembling the crates, the duckboards were easy to make. The size was more a function of the wood I had on hand than anything else. I made one 3' x 3 $\frac{1}{2}$ ', and two 2' x 2 $\frac{1}{2}$ '. I made the slats 3"

wide. I didn't have enough 3" pieces of sufficient length, so I had to rip some of the 6" wide boards lengthwise. The base of the duckboard was made of three slats. The top slats were installed with about $\frac{1}{4}$ " to $\frac{3}{4}$ " spacing to allow the swarf to fall through. I didn't measure the gap; I spaced the slats to come out even. Whatever size duckboards you make, be sure that they can be picked up easily so that you can clean the floor underneath. One suggestion I got was to put small rubber pads under the duckboard to keep it from sliding. I have not done that yet, but I may if I find that they slide around.





I screwed the slats together with # 6 x 1- 1/4" sheet rock screws, mostly because I had a large box left over from another project. I glued the corner joints down so that the mat would stay square. I cut a round nose on the boards around the periphery with a router to slightly reduce the trip hazard.

They came out better than I expected.

Good luck making your own duckboards!

