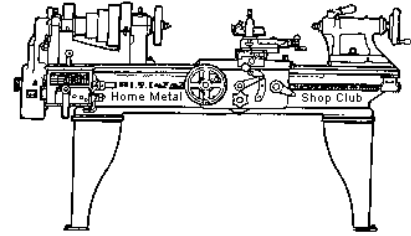




**June 2021**  
Newsletter

Volume 26 - Number 06



<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>Vance Burns</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 10 July 2021 Meeting

The next general meeting will be held on 10 July 2021 at 1:00 P. M. on-line at Zoom.us and in person at [TxRxLabs, 6501 Navigation Street, Houston, Texas 77011](#). A week before the meeting invitees will receive from the webmaster the meeting ID and passcode to join the on-line 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](#).

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.

Officer elections were held today. Members elected Vance Burns to serve as president. The club thanks Brian Alley for his several years of service as president. Incumbents in other club offices will continue to serve for another year.

## Recap of the 12 June 2021 General Meeting

By Joe Sybille



Fifteen participants attended the 1:00 P.M. virtual meeting. There were two visitors, Wilfred Nijs,



and Bruce Williams.

President Vance Burns, led the meeting (right photo).

## Presentation

There was no formal presentation today.

## Safety Moment

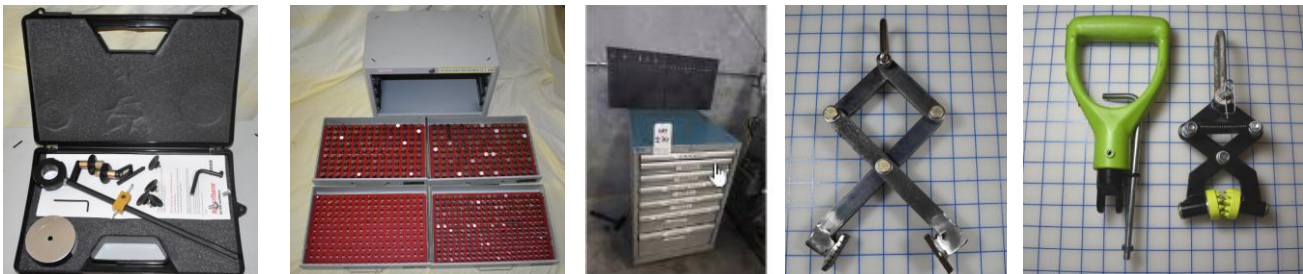
The safety video depicted re-enactments of preventable accidents caused by workers failing to ask others for help, energizing circuits without ensuring it was safe to do so, hurrying to complete a task, and failing to observe safe work practices.

## Show and Tell

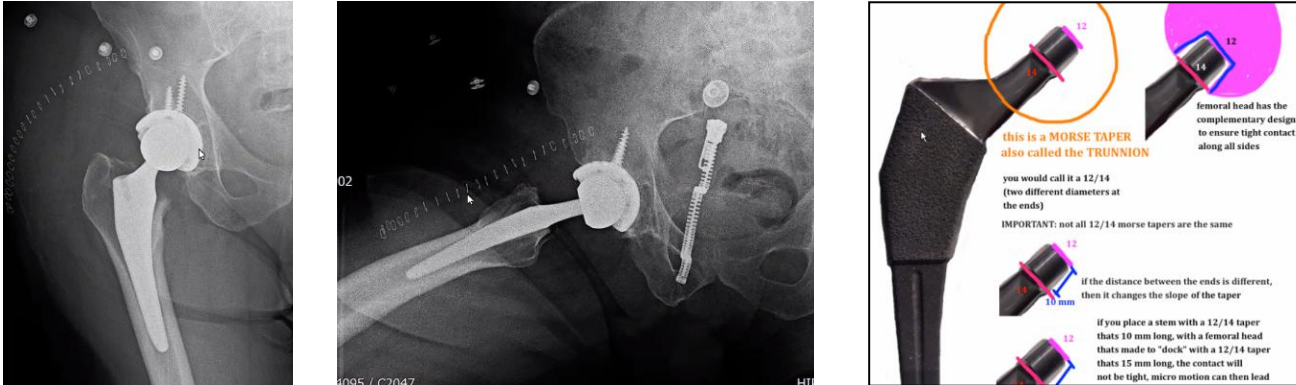
*John Cooper* showed a circle cutter jig for his plasma torch. At a recent auction, he won successful bids for a set of pin gauges to test for run-out and for a storage cabinet. Also, he finished his brush grubber clone, but was dissatisfied with its performance for two main reasons: the pads do not meet because he did not account for the offset and the lack of a diamond pattern on the pads to give them more grip. After purchasing a Brush Grubber, he replaced the handle with a clevis so he could use a lever to pull a sapling embedded in another plant.

The Vermont gauge pin set is complete except for the 0.375 pin. Gauge pin sizes range from 0.061" + .0002 to 0.750" +.0002". The set weighs over 75 pounds, not including the cabinet.

As mentioned during the virtual meeting, the Hypertherm circle jig has several minor issues. First, there is a burr that would not let him set in the pivot point, and second, according to the parts list there is supposed to be a nylon set screw, but there is a steel one instead and it will not clamp the nozzle ring. See photos below.



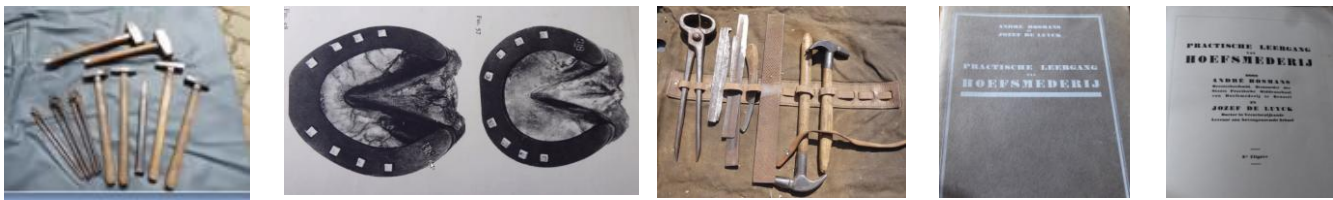
*Dick Kostelnicek* exhibited a set of x-ray photos proving he is truly a machined man. Recently, he underwent total hip replacement surgery. To his surprise the surgeon implanted a Morse tapered fitted ball in place of his original hip ball. See photos below.



*Richard Douglas* displayed a photo of the workbench he built for both his lathe and mill. The table top is made from two layers of 3/4" medium density fiberboard (MDF). After gluing and screwing the layers together every six inches along the length and the width, Richard applied three coats of varnish at fifty percent strength. Afterwards, he applied several coats of varnish at full strength until the top surface absorbed no more of the varnish. So far, the top surface appears durable and resistant to liquid spills. See photos below.



*Wilfried Nils* showed a book on the tasks of a farrier. He found the book after searching for it for many years. It is written in Dutch and was published in 1931. Also, he displayed several pictures of the hooves of a horse and explained the intricacies a blacksmith/farrier would encounter when making horseshoes and shoeing a horse. Tools Wilfried displayed belonged to his grandfather. See photos below.





Joe Sybille displayed a table he built from plans found on the web. He modified the plans to accommodate wheels and a leveling support. A benchtop mill will be placed atop the table. See photo at right.



## Problems and Solutions

A participant sought suggestions on the arrangement of equipment in a small (11'-6" by 16'-6") garage workshop. Solutions offered included placing equipment on wheels, storing seldom used equipment on shelves under workbench tops, adding an a/c unit to control the humidity in the workshop, and looking for storage opportunities throughout the garage.

## Articles

### Trials of a Drill Mill Part 1

by Richard Douglas



I bought a used Grizzly G0463 from the kid who lived across the street. He bought it to use for his robotics club in his senior year in high school and was going away to college. He wanted the money more than the mill. The price was good and I wanted a mill. I had become friends with the kid, helping him out with some robotics projects. So we carried the mill across the street to my shop. I had my 1922 South Bend Lathe for a little over a year, as I was building my little machine shop.

The mill worked well. It has a 6" x 21" table and uses R8 tooling. In the headstock is a two speed gear box with a variable speed  $\frac{3}{4}$  hp DC motor drive. I was learning how to use my mill by making tools so I could make other tools when smoke poured out of the DC motor bottom. The plastic that insulated the brush housing had melted.

I called Grizzly for parts and they informed me that they only sold the complete motor at the cost of \$150. I had spent my shop budget on tooling and a new motor was not in the cards. Other retailers sold the same mill, albeit under different names. Someone had to have parts. Little Machine Shop came to the rescue. They had the motor end bell for \$35. That could fly under the radar. A week later I was back in business. Everything was fine for about 6 months when the mill quit again. I checked the brushes; they were fine. I checked the fuse; it was good. I finally determined the DC controller board went bad. Replacement cost \$250. Things were going from bad to worse. The DC motor was going to have to go. I had been eying the belt drive upgrade that Little Machine Shop sells, but the \$135 price tag was more than I wanted to pay for basically a couple of pulleys and a belt. I looked around my shop and I had a crappy drill press from HF, \$39 on sale, that I was never going to use again. Could the pulleys from it work on

the mill? Yes, I could bore out the quill pulley and it would fit the quill on the mill. With a little lathe work, I would have a set of pulleys. They would not be as nice as the store bought ones, but functional. The belt drive conversion did not use the gears, so I removed them to save weight. The new motor was going to weigh more. The cast iron gear cover at the top of the headstock also was removed as the pulleys did not fit inside it. Four pillars were added to the top of the headstock and a motor mounting plate on top of the pillars.

Next month I shall discuss selecting the motor and the VFD.