# November 2017

Newsletter

Volume 22 - Number 11

http://www.homemetalshopclub.org/
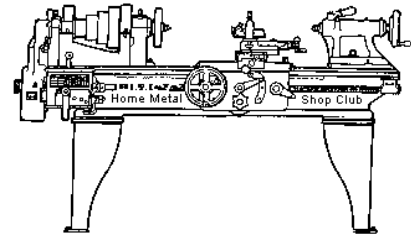
The Home Metal Shop Club has brought together metal workers from all over the Southeast Texas area since its founding by John Korman in 1996.

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 | Vice President | Secretary | Treasurer | Librarian |
|-----------|----------------|-----------|-----------|-----------|
| *Brian Alley* | *Ray Thompson* | *Joe Sybille* | *Emmett Carstens* | *Ray Thompson* |
| Webmaster/Editor | Photographer | CNC SIG | Casting SIG | Novice SIG |
| *Dick Kostelnicek* | *Jan Rowland* | *Martin Kennedy* | *Tom Moore* | *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 09 December 2017 Meeting

The next general meeting will be held on 09 December at 12:00 P. M. (Noon) in meeting room D of the Parker Williams, Harris County Library, 10851 Scarsdale boulevard, Houston, Texas 77089.  Brian Alley will give a presentation on "3d printed welding jigs in the field".

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 were due at the September meeting.  Dues are fifteen dollars ($15.00) and payable to Treasurer Emmett Carstens.  He will accept cash or a check made payable to him.


## Recap of the 11 November 2017 General Meeting
By *Joe Sybille*, with photos by *Jan Rowland*



Twenty members attended the 12:00 P.M. (Noon) meeting at the Parker Williams, Harris County Library, 10851 Scarsdale Boulevard, Houston, Texas 77089.  There were no visitors in attendance. There are twenty-nine members in good standing with the club.



President Brian Alley led the meeting (right photo).

## Presentation

Today's presentation included a video of a talk on models of both steam and internal combustion engines crafted by former club member Don Foster. Foster crafted the model engines to exhibit the evolution of engines from several eras. All of his models are fixed on a custom built trailer that he tows to different venues. He displays and shares with others the era in which the actual engine was common and its many uses. The trailer is fitted with compressed air to demonstrate the workings of the models.

## Safety Moment

President Brian Alley showed a safety video of unsafe work practices that bordered on complete disregard for basic safety measures.

## Show and Tell



*Richard Douglas* showed a Starrett indicator with graduations in tenths and a pair of nipper pliers. See photo at left.



*Brian Alley* exhibited tools he made. Among them is one for a door lock on air tight hatches. Another tool serves to set the brake on a bulldozer. And another tool is used to tighten the tool post nut on his lathe. See right photo.



*Rich Pichler* displayed a collection of garage sale finds. Among the finds is a bending brake for which he gave a demonstration of its operation. Also, Rich showed a couple of videos demonstrating the finer points of bending brake operation. See photo at left.

*John Cooper* showed video clips of his recent tour of the Soule' Steam Feed Works Museum during its annual fall festival in Meridian, Mississippi. The festival takes place the first weekend of every November. It features demonstrations of portable and stationary steam engines, belt driven equipment in the machine shop, and other machinery enthusiasts demonstrating their crafts.

## Problems and Solutions

A member asked for suggestions on how to replace the power cord to an oiler on the mill he is restoring. He received the recommendation of a local supplier.

Another member asked if there was any interest in bidding for a job to fabricate lifting blocks per an existing design. Design details will be provided for those interested in the project.

## Articles

## Joystick Input for CNC – Mach3
By *Martin Kennedy*

As a follow-up to my article last month on using my CNC lathe running LinuxCNC with a joystick, I have converted my CNC mill running Mach3 to use a similar joystick. As expected, it was a little easier configuring it, although it did take longer than I expected.
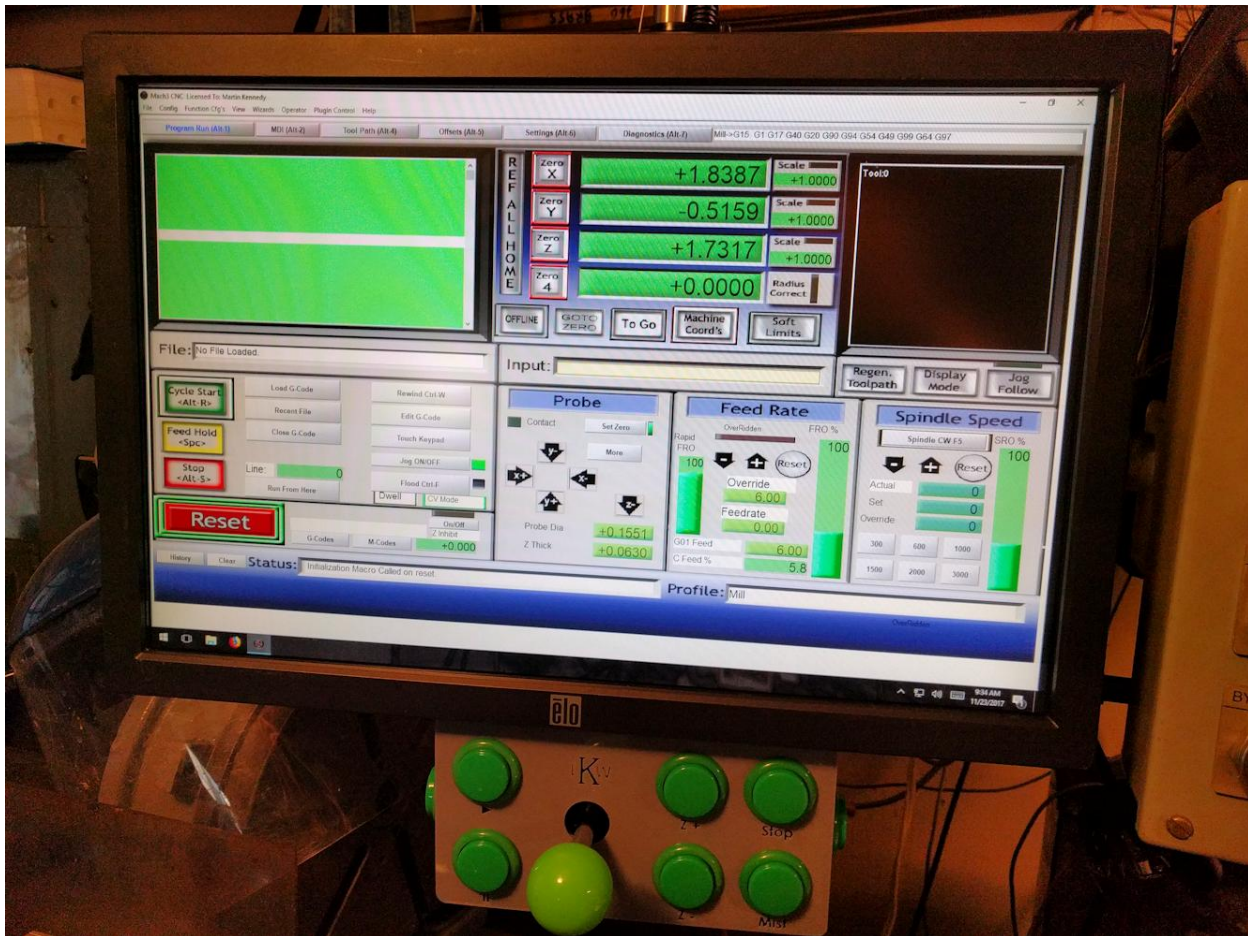


There are two fundamental ways to use a Joystick in Mach3. The first is to use a plugin, and generate Mach3 OEM Functions. The second is to use a program that uses the joystick to generate keypresses. Mach3 comes with a basic plug-in for the joystick already installed. It is fairly limited, however, and can only read the joystick and not any buttons. There are a couple of third-party plugins available. I tried all three located at the link: http://www.machsupport.com/software/plugins/

The one I had the best success with was "JoyPad and Game Device Plugin" by Hjort and Atifeh. This plugin allows you to assign Mach3 OEM Functions to the buttons. Here's the link: http://www.machsupport.com/Mach3Wiki/index.php?title=OEM_Buttons.

I had some trouble with this plugin, as it was written for a different gamepad and did not fully support my joystick. Also, I wanted to map a fast/slow button for use with the joystick, and this can't be done using an OEM Function.

I tried three different programs that map keyboard button presses to the joystick. The one I ended up using was one that came with Mach3, called KeyGrabber.exe. The only problem configuring this program is that you have to find the keyboard shortcut for the command you want, and it can only be used on screens that show that button. I found several places on the internet that have tables of Mach3 shortcuts, but none were complete. Additionally, you may wish to make a shortcut for a button that does not have one. The best way to find the shortcuts is to load the Mach3 screen set into MachScreen by Diets at this link.

With this program, you can look at shortcuts associated with screen buttons and edit your screen set if desired. I did find out one strange thing. I use a custom screen set, and you must have a button to turn the Jog ON/OFF on the active screen or the joystick will not work.
Here's how I mapped my buttons:

| Joystick | | |
|---|---|---|
| Button | Command | Key |
| 1 | Cycle Start (Run) | Alt-R |
| 2 | Z up | PgDn |
| 3 | Stop | Alt-S |
| 4 | Feed Hold (Pause) | Space |
| 5 | Z dn | PdDn |
| 6 | Mist (Toggle) | Ctrl-F |
| 7 | Rabbit | Shift |
| Joy L | X- | Arrow-L |
| Joy R | X+ | Arrow-R |
| Joy U | Y+ | Arrow-U |
| Joy D | Y- | Arrow-D |

To use the program, you run it instead of Mach3. There is a button on the screen to launch Mach3. It can also be run automatically with your desired screen set. To do this, create a shortcut identical to the one you use to run Mach3, only replace "Mach3.exe" with "KeyGrabber.exe" in the Shortcut Target, retaining any additional command parameters you've set.

Note: STL file for 3D printing the button enclosure, plus information on where to purchase and how to assemble the joystick kit were included in my previous article, and may be found at this link.