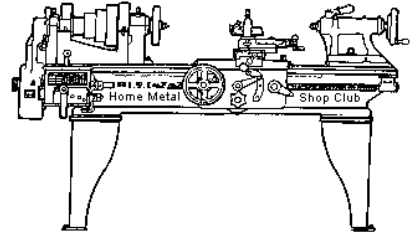




August 2015
Newsletter

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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>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>Martin Kennedy</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 874 subscribers located all over the world.

About the Upcoming 12 September 2015 Meeting

The next general meeting will be held on 12 September at 12:00 PM (Noon) in the meeting rooms of the Parker Williams County Library, 10851 Scarsdale Boulevard, Houston, TX 77089. Vance Burns will give a presentation on his visit to the Maker Fair – California.

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 Norm Berls](#).

Recap of the 08 August 2015 General Meeting

By Joe Sybille, with photos by Jan Rowland



Twenty-four members and one guest attended the meeting at the Spring Branch Memorial Library, 930 Carbindale Street, Houston, TX 77024. There are 59 members in good standing.

President *Vance Burns* led the meeting.



Presentation



Club member *Dan Harper* gave a presentation on Indexing – Part 1 of 2. In the first part he described manual indexing. Generally speaking, indexing is the partition of the circumference of a work piece into a number of equal sectors. Tools required for manual indexing include protractor, divider, and combination square. With these tools, one must accept varying degrees of accuracy. Some of the uses of indexing include reshaping of bar stock and laying out bolt circles.

With indexing and round bar stock, one can layout the appropriate cutting lines to make a square piece and a hexagon shaped piece. Basic geometry reveals the largest square shape possible from a round bar stock is 0.707 times the diameter of the stock. Likewise, the largest hexagon shape possible is

0.866 times the diameter of the stock. From larger hex bar stock, one can make smaller hex shapes and octagon shapes.

In Part 2 of Indexing, Dan will discuss the use of mechanical indexing tools to do the same things done manually, but with improved accuracy.

Dan's presentation can be viewed at [this web link](#).

Safety Moment

Vance Burns showed a video on shop practices that focused attention on risk patterns likely to result in accidents. Among the risk patterns identified were rushing, frustration, fatigue, complacency, and focus, such as eyes not on task or mind not on task. Also, the removal of machine guards was another pattern identified as likely to result in an accident.

Norman Gouger, Sr. spoke of how, years ago, he cut his hand while working as a butcher in a grocery store. He had become complacent, for he knew his job well. After several decades, a misshaped finger resulting from that severe cut serves as a testament to the risky behavior of complacency.

Joe Scott reminded members to be careful of eyesight when using tools. Usually as one ages, one's eyesight diminishes. Consequently, it is important for one to get regular eye examinations to detect and treat problems early.

Norm Berls remarked that monotony is one of the factors that cause complacency. Also, repetitive tasks contribute to a loss of focus.

David Bellinger reminded members that if a finger is severed in the shop, retrieve and clean it and put it on ice. Immediately go to the nearest hospital emergency room. There is a good chance the severed finger can be successfully reattached to the hand.

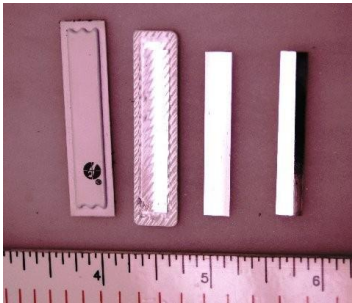
Show and Tell



Gene Rowan showed a 6-inch diameter aluminum cross slide collar that *Martin Kennedy* engraved and *Dick Kostelnicek* fabricated for *Gene's South Bend Lathe* (left photo). Unique about the collar is the fine detail of the graduation marks. *Gene* also demonstrated the use of an instrument used for trammings a mill that was fabricated by *Dick Kostelnicek* (right photo).



Here is a web link to *Martin Kennedy's* video of *Dick Kostelnicek's* explanation of [Trammings a Mill](#).



Jan Rowland exhibited shims repurposed from clothing security labels (left photo).

Alan May demonstrated the operation of a 1906 era four cycle engine. The engine uses acetone for fuel and has a 1-inch bore and 1-¼-inch stroke. Alan made the engine from plans designed by Jerry E. Howell (right photo).



Problems and Solutions - *Ask the Blacksmith*

A member requested suggestions on the best way to drill a 12-inch deep hole in a gun stock. Mentioned was the use of an appropriate length drill bit mounted in a chuck attached to a sturdy spindle.

Another member shared anticipated problems he will encounter building a CNC router with a 9-foot long by 5-foot wide bed.

A member required a repair of one of the adjustment handles on his drill press. The mounting threads are stripped. Solutions included fixing the handle to the shaft with JB Weld metal filled epoxy resin.

A member wanted to know what one should consider when selecting and setting up a lathe. Among suggestions offered were anticipated usage, space available and access to that space, and not least, the budget for the lathe. Accessories to make effective use of the lathe often can equal or exceed the cost of the lathe.

Articles

New Lights for Mill

By Martin Kennedy

It's handy to have lights on your mill (and, for that matter, for your lathe). My mill had a large, sealed halogen light. I had it mounted on the left side of the mill. It always seemed to be in the way, so I moved it to the right side of the mill. Again, it always seemed to be in the way. Additionally, whichever side it was on, it would cast a shadow on the back side of the mill. Sometimes, I had to get a flashlight so that I could see something there. There had to be a better way.

There's a new kind of LED light out made by a company called [Cree](#). It's very bright. Recently, many Chinese manufacturers have begun packaging the LEDs for use on automobiles and motorcycles. They operate at a relatively cool temperature, are compact, and inexpensive. Also, they are available in weatherproof enclosures. This makes them ideal for use in machining. You can find them by searching for "[cree work light](#)" on eBay.



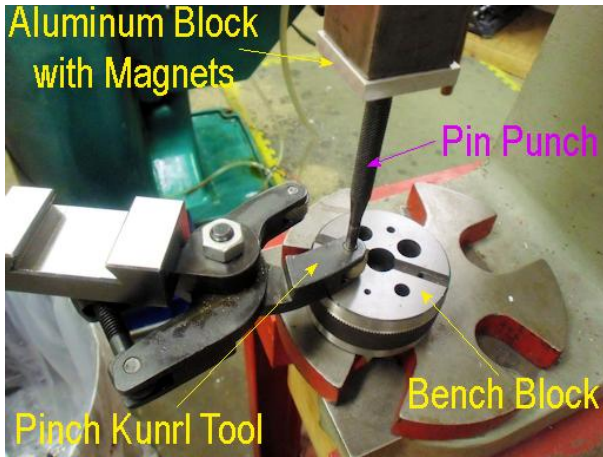
I bought two 20W equivalent lights, each with 4 LEDs. (eBay ad was for [2X Motorcycle Universal White CREE LED](#)) Total cost shipped was just over \$14. I liked these lights because of the swivel mount and the small size – about 2-½-inch oval. I measured the current required and each took about 400 mA at 12 VDC. My CNC mill had an unused 12VDC 1A switching power supply that powered both units. The ad said that they would work on 12-85VDC, and I thought about hooking them in series and driving them with 120VAC via a solid state bridge rectifier, but this remains untested.

I also considered [some 6 light units](#). I made a couple of brackets to hold the lights to either side of the mill's quill. Wow! It's brighter than my halogen light. I can see all around the mill! And they're tucked up under the mill, out of the way!



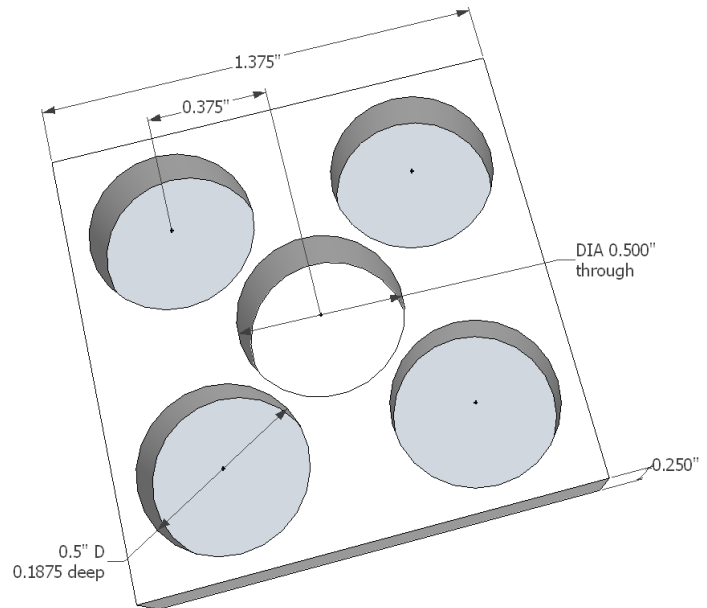
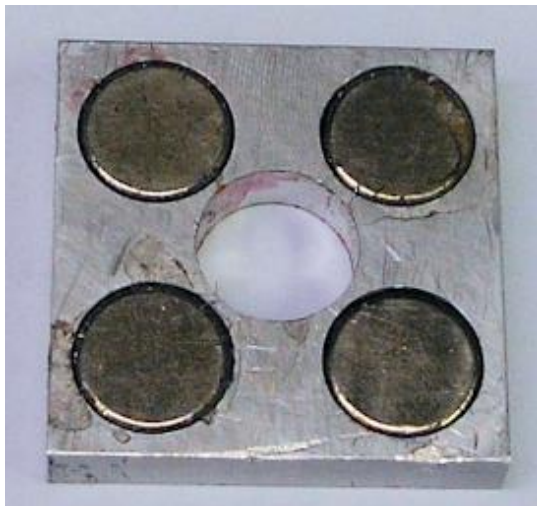
Magnetic Third Hand

By Dick Kostelnicek



Shown at the left is a procedure that requires three hands: removing or installing a knurling wheel. A $\frac{1}{4}$ inch axle dowel that is being pressed out by a pin punch form a pinch knurling tool. The arbor press is operated by my right hand while the knurling tool is held by the other hand over a small hole in a round bench block. That leaves my third hand to align and hold the pin punch.

I hold the punch magnetically rather than with a third hand.



The above picture and drawing show a $\frac{1}{4}$ -inch thick square aluminum block that contains four neodymium button magnets all having the same polarity relative to one face of the block. The magnets are epoxied into pockets so that the button faces are flush with the surface of the aluminum block holder. A $\frac{1}{2}$ inch oversized hole is drilled through the center of the block to accommodate a pin punch. The block is magnetically attached to the face of the arbor press ram (left photo). A pin punch is set in the hole of the block and thereby hangs magnetically from the press ram (right photo). Hence, my third magnetic hand.



Aligning a bench block's hole with the punch is easily accomplished as shown in the left photo.