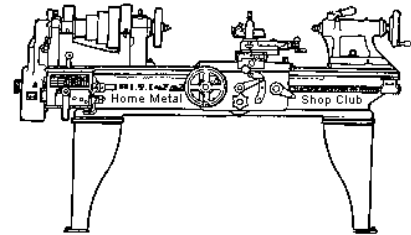




October 2013  
Newsletter

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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>Dan Harper</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>Rich Pichler</i>

This newsletter is available as an electronic subscription from the front page of our [website](#). We currently have 503 subscribers located all over the world.

## About the Upcoming 09 November Meeting

John McCord from [Mastercam](#) will give a presentation on Dynamic Processes at the next general meeting on 09 November. The meeting starts at noon in the [Collier Library](#), located at 6200 Pinemont Dr. in Houston, Texas 77092. Exit highway 290, the Northwest Freeway, at Pinemont Dr. and travel ¼ mile east. Visit our [website](#) for up-to-the-minute details, date, location, and presentation topic for future meetings.

## 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. The library is maintained by the [club librarian, Dan Harper](#). 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.

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](#). 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 that could make a presentation, please contact [vice president, Norm Berls](#).

## Recap of the 12 October General Meeting

By *Joe Sybille*, with photos by *Dick Kostelnicek*

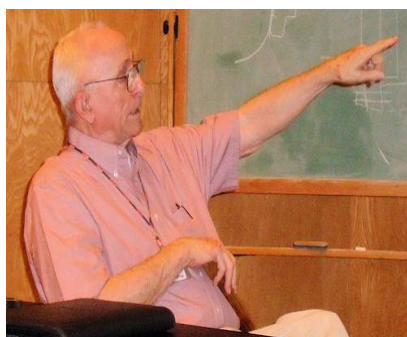
Sixteen (16) members attended the noon meeting at the Jungman Library. There were no guests present. President *Vance Burns* led the meeting.

The club has funds to purchase new books for the library. If you have suggestions, contact the [librarian, Dan Harper](#).

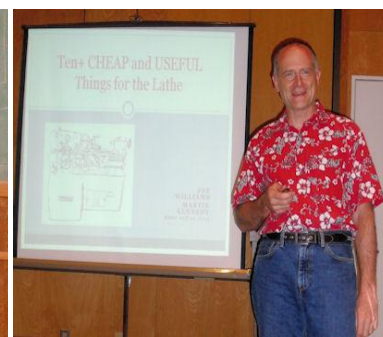


## Presentation

Club members *Joe Williams* and *Martin Kennedy* and gave a presentation on **Ten Cheap and Useful Things for the Lathe**. The presentation was inspired by visits to other member's metal shops. Each visit revealed a simple item that had a lot of value in the shop. Martin and Joe collaborated to produce several presentations on these items, of which the presentation on the Lathe was the first. In this presentation, they showed several items and discussed the significance of each.



*Joe Williams*



*Martin Kennedy*

Here is the link to Joe and Martin's [presentation slides](#).

The items presented were:

- **Tool Height Setter:** This tool makes it easy to set the tool holder height to the lathe center line.
- **Dial Gauge Holder:** This handy gadget integrates a dial gauge and an Aloris type tool holder and provides several holes for various orientations.
- **Ball Bearing Aligner:** Provides a convenient way to align short parts in lathe jaws.
- **Chuck Fine Align:** Allows a 3 jaw chuck to be adjusted for zero run-out, similar to a 4 jaw.
- **Tool Holder Rack:** A convenient Z-shaped rack for Aloris style holders made from two structural steel angles bolted together.
- **Way Protection/Alignment Sled:** A plywood sled to align the chuck for installation and to prevent scarring of the lathe ways.
- **Tail Stock Barrel Stop:** Prevents Jacobs taper drill shank from being accidentally ejected when backing off the tailstock hand wheel.
- **Lathe Stop/Indicator Holder:** A carriage stop block with provisions for a dial indicator
- **Hex Key Holder:** Is mounted on the headstock and holds frequently used hex keys.
- **Collet Protector/Holder:** Protects 5C (or any size) collets from impact damage and from rusting.
- **Low Pressure Air Blower:** Used to blow chips off various parts of the lathe and from stock.
- **Shelf Holder:** When placed on top of headstock or near either headstock or lathe, this item provides convenient storage of frequently used tools.

## Safety Moment

*Vance Burns* played a video of a student engaged in the unsafe practice of trying to prevent the turning of a lathe chuck by holding onto an inserted chuck key. The YouTube video showed the student flipping over the lathe and getting his pants leg caught in the turning chuck by chuck key. Fortunately, the student appeared to have escaped serious injury. This act is not one to mimic.

*Vance* also touted the efficiency of Harbor Freight's \$15 [Noise Canceling Ear Muffs](#).

*Gary Toll* described how he received an electrical shock while drilling a hole in a wall. Investigation of the incident revealed a previous repair to the drill had left the housing electrically hot with respect to ground. While Gary drilled the hole, he grabbed a metal pipe for support. It was then that he completed a circuit by holding an electrically hot drill casing with one bare hand and grabbing a grounded metal pipe with another. Unfortunately for Gary, he inadvertently became a low ohm resistor in a 120 volt circuit, and, subsequently, received a shock.

*Dick Kostelnicek* spoke about the time a screw driver slipped from his hand while removing knock-out inserts in an electrical Knife Switch. Upon touching the 200 ampere fuse holder, the plastic screw driver handle melted within seconds. He brought the screwdriver back to Sears for a replacement.

*Rich Pichler* discussed the futility of installing a horn rated at 6 volts in a circuit rated at 120 volts. The horn will work just once.

## Show and Tell

*Joe Williams* displayed a laboratory scissors jack with a large elevating knob. (right photo).



*John Hoff* made a punch to remove a square piece of metal from a blank. The punch is used with a die shoe (left photo). The finished piece is used in printed circuit boards.

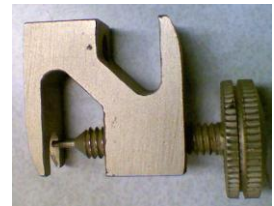
*John* also showed the group the progress made to date on a rifle magazine holder for a vintage

Johnston rifle (right photo).



*Martin Kennedy* made T-nuts and threaded studs to complete an odd set that he had. The set is  $\frac{1}{2}$ "-12 instead of  $\frac{1}{2}$ " - 13, and replacement items are not available. He used single point threading on his mill to make the internal blind hole threading in the T-nuts (left photo).

*Dick Kostelnicek* showed a puller that is used to remove clock hands (right photo).



*Norm Berls* offered for review two books. The first book, which he highly recommended, was Machine Shop Know-How by Frank Marlow, and the second was, Glossary of Metalworking Terms by Richard P. Pohanish. According to Norm, the second book lacked sufficient terms to be useful.

*Dan Harper* fabricated parts for a foreign made lamp purchased at a garage sale. He was surprised to learn some of the threading matched standard U.S. Sizes (right photo).



## Problems and Solutions - Ask the Blacksmith

One member expressed concern about a 6 inch grinder that was slow starting after sitting idle for two months. The lone suggestion was to buy another, for troubleshooting and repairing the grinder was not worth the effort.

## Novice SIG Activities

The novice group considered the identification of essential tools in a machinist's toolbox.

## Articles



## A Scrap Box Drill Jig for Cotter Pin Holes

By Ray Ethridge



One of the jobs that are encountered regularly when working on antique engines is replacing worn connecting pins. A typical batch plus partially machined replacements is shown (left photo). These pins were used extensively prior to the availability of the modern fastening options. They are really straightforward except for the tiny hole through the pin near the end for the cotter pins that hold them in place. I have cobbled up several types of temporary rigs to do this job, and universally the results left a lot to be desired. I had another batch to make for the governor on my single valve simplex engine I am working on, so I decided to build a fixture and do it "right" this time.

I pulled some miscellaneous aluminum pieces from my scrap bin that looked like they might work and got to work. Please note that all dimensions were generated to fit the scrap that I had. There was no drawing although perhaps there should have been! The critical items were a clamping mechanism, a drill guide to fit the drill selected, and a V-groove and a stop to locate the hole in the end of the pin. The drill guide was a piece obtained from the metals rack at a local hardware store. It worked just fine for the few holes that I needed. No need to worry about trying to come up with a hardened drill guide here.



I ended up with an extra set of holes for the clamp *because of lunch*. I offset the vise location before lunch, went to lunch, and then offset it again after lunch. By flipping the part over I was able to drill a second set that worked a little better. As you can see the hole locator did a pretty decent job.



I was able to drill all 5 holes in the pins in a matter of minutes on the drill press instead of the mill, and each one of them is well located. I didn't really start out to make the fixture a universal one, but by putting in spacers I can adjust the location of the hole in the end of the shaft and the V-groove guide. This means I can accommodate a range of shaft diameters from around 0.25 to 0.5 inches with no problem.



By making other drill guides I can accommodate just about any size cotter pin. To give you a perspective of where they are used, I am showing some of the new pins (left photo) inserted in the governor assembly (right photo). It all turned out to be worth the effort, but perhaps next time I will arrange my time so I don't take lunch in the middle of the project.



## Thread Verifier

By Dick Kostelnicek

Here is a threading verifier for Imperial threads. The base is made from 3/16-inch mild steel and measures about 4-inches square. It contains the most common Imperial threads used in my shop: 1/4, 5/16, 3/8, 7/16, and 1/2-inch diameter. Both fine and coarse threads are represented. Each position consists of a threaded through-hole and a 7/8-inch long stud of the same size. Therefore, both bolts and nuts may be checked. The studs are secured in tapped holes with thread locking compound. The thread sizes are stamped on the base adjacent to each thread position. The entire verifier has been Parkerized to inhibit rusting. Note that the 1/2-20 stud, at the lower left, did not take to being Parkerized as it is made from stainless steel.

