

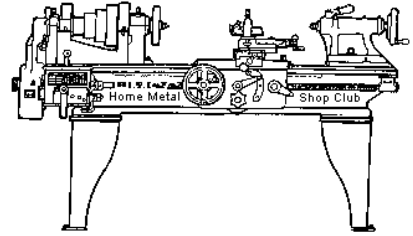


Home Metal Shop Club

January 2015

Newsletter

Volume 20 - Number 1



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 772 subscribers located all over the world.

About the Upcoming 14 February 2015 Meeting

The next general meeting will be held on 14 February at 12:00 noon at the [ARC Specialties Co.](#) which is located at 1730 Stebbins Drive, Houston, TX 77043. Click on this web [Map](#) for location information. Dan Alford will give a presentation on "Welding and Cutting, Material Handling, Pick-and-Place and Test Equipment". Dan has also graciously offered to provide us with lunch prior to his talk. Click here for some [videos of Dan's operations](#).

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 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 [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 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](#).

J. R. Williams passed away January 17, 2015 (left photo). Joe was a long time club member and from his work and personal experience in metal working he enlightened us with vast amounts of technical wisdom and practical know-how. He wrote many articles for this newsletter and always reviewed it prior to its release with the utmost of care (RJK, editor).

Recap of the 10 January 2015 General Meeting

By Joe Sybille, with photos by Jan Rowland

Twenty-three members, including one new member Walter Potter, attended the noon meeting at the Cy-Fair College Library, 9191 Barker Cypress Road, Cypress, Texas 77433. Welcome to the club Walter. Five visitors attended today, Christopher Jones, Preston Brown, Norman Gouger Sr., Willie Smith, and Thayme Golden. There are 50 members in good standing with the club. President *Vance Burns* led the meeting.



Presentation



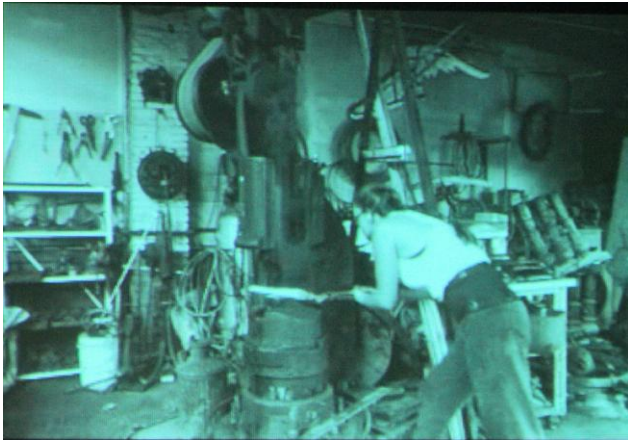
Vance Burn gave a presentation on "Blacksmithing Epistemology for Dummies". Vance began by making the distinction between farriers and blacksmiths. Both work with iron to shape it. The farrier is a specialist in horseshoeing. The blacksmith is a generalist. The art of blacksmithing has broad appeal. Women are prominent in the



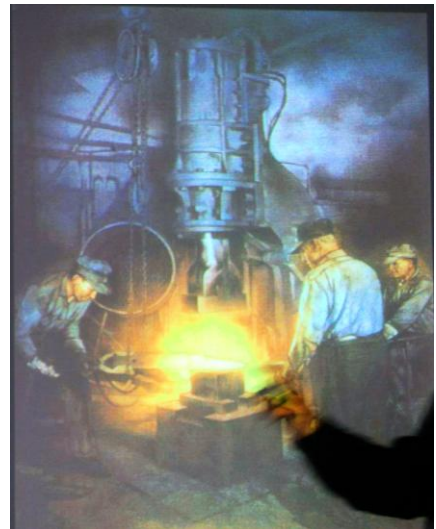
blacksmithing trade, and children are fascinated with the shaping of hot metal. Prominent world figures, such as Winston Churchill, were descended from blacksmiths. The National Cathedral in Washington, D.C. has numerous displays of artwork by blacksmiths.

Among several organizations dedicated to the blacksmithing art form, a major one is the Artist Blacksmith Association of North America (ABANA). At their website, one can learn about the ancient art of blacksmithing (<http://www.abana.org>). Vance showed several slides of artwork crafted by blacksmiths. Artwork included, among others, gates, candle holders, wine racks, stair banisters, hasps and locks, door knockers, and wood planes.

Blacksmiths are known for their tools. Vance showed slides of specialty tools used by blacksmiths. Five tools commonly associated with blacksmiths are hammer, anvil, forge, post vise, and tongs. The hammer is used to strike the metal into the required shape. The anvil is a heavy object of durable material on which



metal is shaped by hammering. The forge is a device to hold a fire for the purpose of heating metal for shaping. The post vise (strapped to a support post) holds firmly hot iron while it is hammered.



Tongs are used to grasp and hold the hot metal.

Vance also showed additional slides and short videos of metal ingots being shaped and forge welded by industrial steam hammers. As technology progressed, so did industrial hammers and forges. Air driven hammers succeeded the steam driven hammers and coal fired forges were succeeded by forges oil fired and gas fired.

Safety Moment

Vance Burns showed a safety video on the hazards of changing a work routine without evaluating the pitfalls of doing so.

Dick Kostelnicek told of how on a certain industrial site injuries to contractors were considered less serious than those same injuries to full time company employees.

Visitor *Norman Gouger Sr.* spoke of how companies will place an employee in a desk job after an injury to avoid the requirement of reporting a loss time injury.

Emmett Carstens shared with those present the diligence of one company he worked for whereby workers were dismissed and barred from returning for failing to recognize at a moments notice emergency warnings and signals.

Norm Berls reminded the group to exercise caution when using an angle grinder. This tool is loud and is known to eject particles from the grinding wheel. Appropriate safety equipment includes ear protection and a face shield. Also, Norm mentioned to bring safety glasses and wear appropriate shoes to the next meeting.

Show and Tell

Vance Burns showed pictures of a well preserved 15 inch drill press he bought through an on-line advertisement.

Joe Sybille showed a metal tray he fabricated on a finger brake built by member *Dick Kostelnicek* (See photo at right.).



Tom Moore provided to members a bound booklet depicting tables of screw thread dimensions. Thanks Tom.

Dick Kostelnicek exhibited an inexpensive multi-meter (Excel model DT9205A) purchased on-line. He said the meter works as well as any expensive meter he has owned or used. Also, Dick displayed a [swarf tray](#) he made to catch chips from his lathe and a custom made indentation punch. He used the punch to make the tray drain indentation near the edge of the tray. (See photos at right.)



Dan Harper offered to members copies of tables depicting dimensions for making tapers.

Problems and Solutions - Ask the Blacksmith

A member has a vintage inoperative tool post grinder. The grinder is belt driven and requires a new motor. He wanted to know the best way to restore the grinder. Suggestions ranged from selling the unit to seeking a motor for it on Ebay.

Another member sought advice on whether the rotameter (ball in a vertical tube) flow gauge for the shielding gas found on many MIG welding units is necessary. No, the flow gauge is not required, but it will save you on gas costs by allowing you to use just the right amount of gas. Additionally, he wanted to know the best method to make a mold for a lead hammer. Nothing was offered that he had not already pursued. Also, this member wanted to know if anyone had a gauge for determining the hardness of steel. One member offered to lend this member a hardness gauge. Another member mentioned there are hardness files available to ascertain metal hardness.

A visitor wanted to know if any member could design and build a duplicator machine to build prototype parts for mountain climbing gear. He wishes to avoid using CNC machines because of the time required to program the machine for design changes. While this visitor knew of the availability of

existing duplicator machines, he considered them too large for his purposes. He wanted something that would fit within a footprint approximately two feet square.

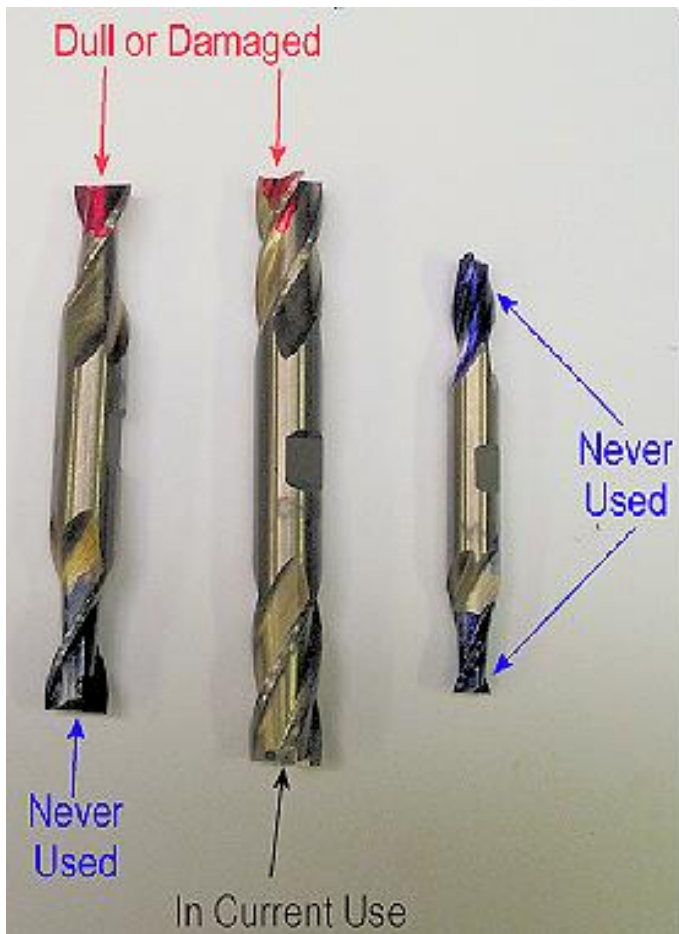
A member asked for suggestions on the best way to clean a honing wheel that had become oily. A solution offered was to heat the wheel in an oven and let the oil drain from the wheel. This same member has a set of inside micrometers. On several of the instruments, he felt the friction between the barrel and the thimble was excessive. After examination of the instruments by a few members, this member was advised to leave the micrometers as they were, for an easily turned thimble would lead to inaccurate measurements.

Another member wanted to know the best way to place identifying marks on the ends of bushings. Suggestions included the use of etching pens to scribing with a vibrating needle.

Articles

Managing End Mills

By Dick Kostelnicek



Grabbing an end mill and immediately knowing if it has been used or damaged requires somewhat more sophistication than the usual visual or tactical inspection. In fact a slight encounter of a finger with a very sharp new end mill can draw blood and send you scurrying to the first aid kit. You have a kit in your shop, don't you?

When I obtain new end mills I paint both cutter ends with blue layout die. Blue indicates sharp and never used. The blue dye wears off as the mill begins cutting, so an unpainted or silver colored end mill is currently still good and in service. When a cutting end gets dull or damaged, I paint it red.

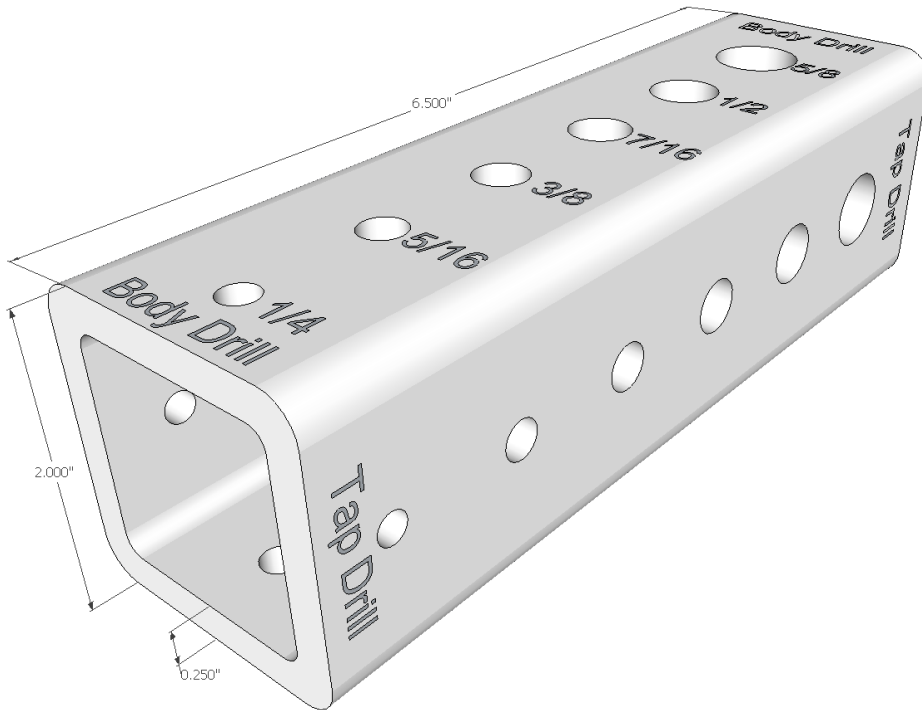
With this color code, I can immediately take stock of the condition of an end mill visually.

- BLUE Never Used
- SILVER Used but serviceable
- RED Dull or Damaged

For single-end end mills, I still paint them blue upon arrival so I can tell if it has been used.

Drill and Tap Fixture

By Dick Kostelnicek



Here is a simple to make fixture that helps keep drilled and tapped holes perpendicular to a metal surface. It's made from a length of 2-inch square 1/4-inch wall tubing

It has guide holes for both body and tap drill sizes. The tap drill holes were drilled for the fine thread which is a bit larger in diameter than the corresponding coarse thread. Hence both fine and coarse tap drills can be held straight with this fixture.

The body drill holes can be used as a vertical bushing for both drilling and tapping holes. A major reason why

taps break off is that they are not precisely aligned with the drilled hole.

I also made a drill and tap fixture for smaller threads, #6 through 3/8 inch, out of 1 inch square tubing having a 1/8 inch wall thickness. The photo at the right shows a #6 tap being guided with this smaller fixture.

As an added bonus, when drilling or tapping with this fixture, the stringers and chips are trapped inside the guide's square cavity. When finished, just dump the trapped shavings into the trash can.

