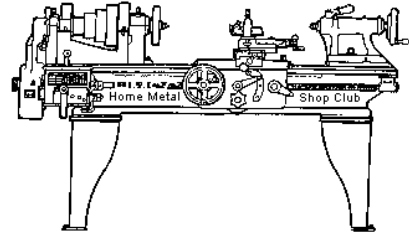




## September 2017

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  
*Brian Alley*

Vice President  
*Ray Thompson*

Secretary  
*Joe Sybille*

Treasurer  
*Emmett Carstens*

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*Dick Kostelnicek*

Photographer  
*Jan Rowland*

CNC SIG  
*Martin Kennedy*

Casting SIG  
*Tom Moore*

Novice SIG  
*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 14 October 2017 Meeting

The next general meeting will be held on 14 October at 12:00 P. M. (Noon) in the [Ft. Bend County Library \(University Branch\)](#), Brian Alley, will give a presentation on "Photo Tour Of Line Shaft Machine Shop".

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 09 September 2017 General Meeting

By Joe Sybille, with photos by Jan Rowland



Eleven 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 seventeen members in good standing with the club.

President Brian Alley led the meeting (right photo).



## Presentation



Club member, Norm Berls, gave a presentation on 'A Clock Making Experience'. While he has not built a clock, Norm has done extensive research on what one must consider to build one. His focus has been on the making of a skeleton clock. A skeleton clock is one in which the working mechanisms are exposed for the viewer to see. Helping Norm with this learning journey has been advice from authors of YouTube videos by Chris of ClickSpring, and Ken Toonz, a maker of clocks using CNC tools.

Norm began by defining horology, a word with which every clockmaker is familiar. Horology is the study of and measurement of time. Major parts of a skeleton clock include, but are not limited to balance wheel, escapement, balance spring, mainspring, and tourbillon. Among the items to consider when making a clock are tools, techniques, materials, and costs.

Small hand tools likely found in a modestly equipped home machine shop will suffice for the majority of the work. There are a few specialty tools that are required to build a clock. For example, a depthing tool is used to ensure the correct meshing of gear teeth. This tool can be made. Small collets, gear cutters for both involute and cycloidal gears, lathe die holder, and alignment tools are other tools that must be acquired for successful clock building. A bluing tray is helpful to add coloring to fasteners and other small parts. Most plans for skeleton clock building use metric dimensions. Converting these dimensions to imperial may not be the best use of one's time, so plan the purchase, if any, of tools accordingly. Since many of the clock parts are small, a headband magnifier with minimum of 3X magnification is a useful accessory.

Manual welding techniques and the dexterity to assemble small parts are within the skill set of the typical home shop machinist. Drilling holes in brass requires some expertise, for insuring consistent hole sizes in the malleable metal takes a little practice. One should be prepared to test one's hole drilling techniques on a few pieces of scrap brass before moving on to the finished parts.

Materials considered for Norm's proposed skeleton clock include brass of type C353, drill rod, hardened steel, tool steel, and mild steel.

Inasmuch as brass is the major material used in the construction of the skeleton clock, one will be surprised to discover the cost of this material. For example, a sheet of brass with dimensions 24"x36"x 3/16" costs about \$713. Another sheet of brass 36"x48"x1/4" costs \$985.

Two reference books recommended by Norm are 'Making Clocks' by Stan Bray and 'How to Make a Skeleton Clock' by John Wilding

Norm's presentation slides can be [viewed at this link](#)

## Show and Tell

*Richard Douglas* showed an end mill purchased on Amazon at a good price (right photo).



*Emmett Carstens* exhibited a pair of gear plier wrenches (left photo).



## Problems and Solutions

A member asked for suggestions on how to remove a jammed taper from a drill chuck. The taper is a JT3/MT3 adapter. Several suggestions were offered. This same member wanted to know how to make a part for his mill that he inadvertently forgot to install when re-assembling his mill. He would like to make the one-piece part as a two piece part. Doing so will facilitate installation of the part. Suggestions ranged from disassembling the mill again to install the one piece part to using 3D printing technology to make the two-piece part.

Another member asked for information on identifying a double taper collet for his mill.

## Articles

### Large Radius Gage

By *Dick Kostelnicek*



Inexpensive radius gage sets only measure up to ½-inch (left photo). Sets useable up to 1-inch are quite expensive, well over \$100. When you need just one large gage, you can quickly make it by using a variety of common shop techniques.

I needed a ¾ inch radius gage. So, I fashioned one from a piece of galvanized sheet metal using a 1-½ inch hole punch (right photo). I punched a hole in the metal sheet, followed by a few cuts with a tin snip, I pressed all the parts flat in an arbor press and removed any burrs. Finally, I soft soldered the pieces together (photo below).



This gage will measure inside, outside, and outside corner radii.

