

# THE forge & plane



Official  
Newsletter  
of the  
Fort Vancouver  
Trades Guild

VOLUME X Number 1

Winter 2013

## Our Indispensable Youth Volunteers

*By Cassie Anderson*

*FOVA Youth Volunteer Coordinator*

Over 100 youth, aged 9-17, compose this park's Youth Volunteers-In-Parks (Y-VIP) team. Most of these youth demonstrate and interpret in costume at events, programs, field trip visits, off-site presentations and festivals, the park's day and overnight summer camps, as well as contribute to the site by maintaining the interpretive garden, volunteering in the costume department, working in the archaeology lab, assisting in research, mentoring other youth, and more.

### Goals

This park's youth volunteer program rocks because it fosters a meaningful national park experience for youth through volunteerism. In short, we're connecting kids to parks. It is our goal that the park's youth volunteers achieve life skills for Fort Vancouver and beyond, seek paths to higher education and professional careers, serve as role models for their communities, and become

stewards of public lands, including national parks.

These goals have real impacts on young peoples' lives. From college and scholarship applications to summer jobs in the park, from easing the transition into middle school to fostering new friendships, skills, and newfound confidence, the park's Y-VIP program not only models what youth volunteerism looks like in the National Park Service, but spotlights the powerful work young people are doing in our community, and in our national park.

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*The goal of this newsletter is to keep guild members informed on the goings on at the fort, techniques of the historic smiths and carpenters, as well as news about our fellow guild members. Please send me ideas about any of the above that you would like to see in your newsletter.*

*Craig Webster  
Newsletter Editor*



## ***What's New This Year?***

This year, we combined the Dame School and the Young Engage School – conceived and developed by volunteer Eileen Trestain, among many dedicated others – into one first year program and one second year program, with about twenty kids in each. We got rid of the fee for the second year program to incentive youth to continue volunteering with us. We also added new sessions to the mix, like music, global trade, and the Nez Perce Memorial Ceremony that the park hosts every April.

To learn more or work hand-in-hand with this park's stellar youth team, contact Cassie Anderson, Youth Volunteer Coordinator, at [cassie\\_anderson@nps.gov](mailto:cassie_anderson@nps.gov).



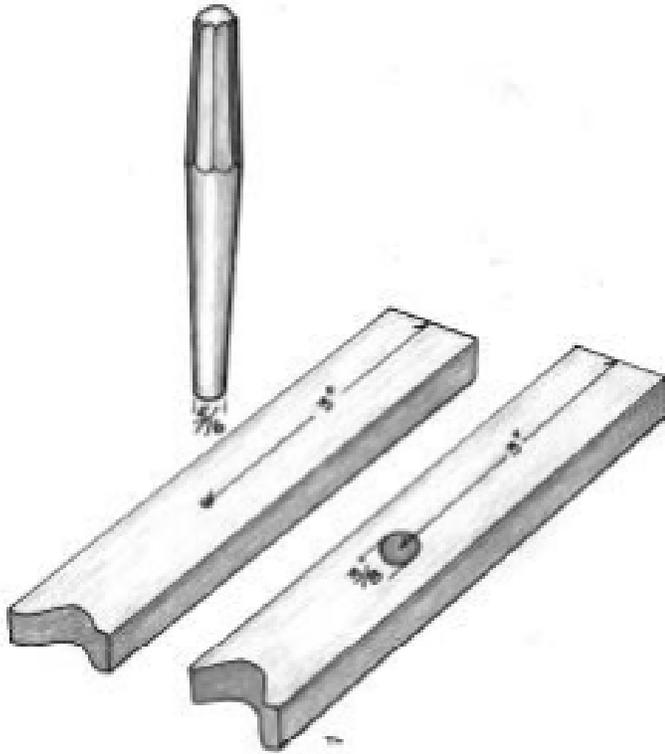


# Controlled Hand Forging Lessons

## Hot Punching

By Doug Wilson Illustrations by Tom Latané

Create holes or recesses in bars or plate by driving punches into or through hot material.



*Punching- layout and specifications*

(Holes or impressions can be made any shape you can make a punch.)

Punch a  $3/8$ " round hole through the center of a  $3/8$ " x 1" bar with the hole's center 3" from the end of the bar. Drift (stretch) the hole to finished size.

The finished hole should be  $3/8$ " round, with clean sharp edges. The hole should pass through the bar at 90 degrees.

The wide surfaces of the bar should be flat with no discernible hammer marks.

The bar should remain  $3/8$ " thick.

The bar will bulge out slightly on either side of the hole.

The original edges of the bar should be straight in line

on each side of the hole and without any twisting.

Intent:

Students will learn to hot punch clean accurate holes and to check their results for accuracy.

Tools Needed:

Forge, anvil, hammer, round punch, center punch, square and ruler.

Materials:

24" of  $3/8$ " x 1" hot rolled mild steel.

24" of  $3/8$ " hot rolled round bar (to check final size of punched hole).

Method:

When working to a specific hole size, start with a punch slightly smaller than the finished hole size. After the hole is made it can be enlarged to final size by drifting (stretching) with the punch.

The Punch

The punch may be made of plain carbon tool steel at least  $5/8$ " in cross section, forged to shape and normalized (air cooled until room temperature from a red heat). W1 or O1 drill rod, available at industrial supply shops, would be a good steel for this punch.

The business end of the punch should be a tapered round cross section  $2\ 1/2$ " long,  $9/32$ " to  $5/16$ " round at its end and filed or ground flat with sharp edges after normalizing.

The top end should be tapered slightly to reduce mushrooming in use.

A hand held punch should be 10" to 11" long. A punch held in tongs should be  $3\ 1/2$ " to 4" long.

Step One:

Make a center punch mark in the center of the bar 3" from its end. Take a bright yellow heat where the bar is center punched. Place the bar flat across the face of the anvil, center punch mark up. Carefully place the punch over the center punch mark. Strike a single solid blow to sink the punch into the hot bar. Make sure

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the end of the punch is still where it is supposed to be. Continue striking solid blows until the punch is nearly through; another two or three blows. The punch will feel solid against the face of the anvil. If you have done this quickly the bar will still be at a bright orange heat.

Hints:

Wear a glove on the hand that is holding the punch.

Quench your punch after every four or five blows. This will help to prevent the punch from deforming.

A few soapstone X-marks on the center punched side of the bar will help you get the punched side of the bar



*Some different styles of punches*

*I would like to personally thank the ABANA Educational Program Committee for giving us permission to excerpt their articles to improve the forging skills of our blacksmiths.*

The ABANA Educational Program Committee is pleased to announce the Forging Fundamentals program. The committee consists of Bill Callaway, Arizona; Jay Close, South Carolina; Bob Fredell, Minnesota; Dereck Glaser, Maine; Tom Latané, Wisconsin; Peter Ross, Virginia; Doug Wilson, Maine; and Dan Nauman, Wisconsin, Program Chairman and ABANA Board Member.

All the individuals listed have been involved in teaching and demonstrating hand-forging techniques to a broad range of people, and most all committee members have been full-time blacksmiths for a number of years. The range of style and technique is also broad among the committee. Some of the members have been working towards this program for almost four years. Much thought, many conversations, and countless hours of planning have occupied their time towards this mission.

facing up when you first put it on the anvil.

Scraping the surface of the bar with your hammer will help you locate the punch mark. (Scale will fall into the punch mark leaving a small black spot.)

Learn to hit the punch directly and hard on the first blow. Avoid aiming blows.

The cold end of the bar can be supported on your thigh or on an adjustable stand set anvil high.

Step Two:

Immediately turn the bar over on the anvil. Look for slight bulges on either side of the hole and a dark spot where the punch was driven into the first side of the bar. Position the end of the punch exactly over the dark spot. Strike several heavy blows. You will feel the punch solid against the anvil face again. Move the bar, with the punch in the hole, over the pritchell hole (the round hole in the heel of the anvil). Strike one or two more blows over the pritchell hole and a small slug will be driven out of the hole. Now, straighten and flatten the bar with light hammer blows on the anvil face. (The bar should still show color during this part of the process.)

At this point you will have a hole. It should be a bit smaller than the desired size.

Notes:

If the punch doesn't clear the slug from the hole it is likely because the punch was misaligned when the bar was turned over or because the punch didn't have sharp edges on the business end.

The slug should be driven out from the second side of the bar. Avoid the temptation to turn the bar back over to the first side and try to drive the slug out.

Illustration of misaligned punch with slug hanging from one side of the hole.

Step Three:

Now you need to drift (stretch) the hole to the desired size. Heat the bar to an orange heat again if necessary. Place the hole over the pritchell hole, insert the punch



*Correct and incorrect alignment of the punch*

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and drive it in a bit further. Remove the punch, turn the bar over and drive the punch from the second side. Continue this sequence until the hole is just large enough for the 3/8" round bar to fit through easily. The drifted hole should be just a bit larger than the 3/8" round bar

so that when it is cool the 3/8" round will still fit through the hole.

Hints:

When drifting, work a bit from one side of the bar and then from the other. This will make the hole more uniform in size. If you only drift from one side the hole would be wider on the top than on the bottom.

Finally, straighten and flatten the bar with light blows and a low heat.

Targets:

Try to punch and drift the hole and straighten the bar in one heat.

(Beginners may need a second heat to accomplish this.)

Check you results using the 3/8" round bar, a square and a straight-edged rule. The 3/8" round bar should just fit through the hole you punched. The hole should pass through the bar at 90 degrees. The bar should be flat and uniform in thickness. The bar should be straight and without twist. The surfaces of the bar should be smooth with no discernable hammer marks.

Forging Dynamics:

The flat bottom of the punch pushes the steel beneath it out-ward as it is driven into the hot bar. The sides of the bar bulge outward slightly.

When the bar is turned over and punched from the second side the sharp edges of the punch end shear out a small slug.

Driving the punch further into the hot bar stretches the hole larger, increasing the bulges on either side of the bar.

Steel expands when it is hot and shrinks as it cools. When hot, the drifted hole should be just a bit larger than the 3/8" round bar so that when it is cool the 3/8" round will still fit through the hole.

## Craft Links

### [The Northwest Blacksmith Association](#)

<http://www.blacksmith.org/>

A Washington corporation and 501 (c) 6 non-profit trade association, was founded in 1979. Now at 500 strong and growing, our Mission is Education in Blacksmithing and related Metalcrafts.

### [Northwest Woodworking Studio](#)

<http://www.northwestwoodworking.com>

A great site for those of you who work in the wood shop and may be interested in improving your skills — and, it's local!

### [Bye Engraving](#)

<http://www.byeengraving.com/>

Located in Portland, Oregon. We offer all types of engraving and have been doing professional engraving since 1967.

### [Anvilfire.com](#)

<http://www.anvilfire.com/>

A unique resource for blacksmiths and related metal workers. anvilfire is your best on-line metalworking information source.

### [The Blacksmiths Ring](#)

<http://www.anvilfire.com/web-ring/smithring/>

This web ring is dedicated to the art of blacksmithing, the works, the smiths and those who supply and educate them.

### [Sloss Furnaces](#)

<http://www.slossfurnaces.com>

Sloss furnaces are a national historic landmark and well worth the visit.

### [How to Make Springs](#)

<http://home.earthlink.net/~bazillion/intro.html>

This site will tell you more than you want to know about springs.

### [Steel Temper Colors](#)

[http://www.anvilfire.com/index.php?bodyName=FAQs/temper\\_colors\\_hardness.htm](http://www.anvilfire.com/index.php?bodyName=FAQs/temper_colors_hardness.htm)

A tempering temperature color chart for plain carbon steel

### [Files and File Making](#)

<http://www.watchman.dsl.pipex.com/filemaking/index.html>

This site has great photos and information on making files both historical and contemporary.

### [Buckeye Engraving](#)

<http://www.steelhandstamps.com/>

Manufactures custom stamps and dies for jewelers, metal-smiths, machinists, mold makers, knife makers and gunsmiths

# General Meeting Report

A general meeting of the Guild was held on February 2nd. There were several housekeeping items that were corrected. The Guild is now officially named the Fort Vancouver Trades Guild and has a fiscal year of November 1st to October 31st.

The item that has the most potential significance to the Guild were changes in the by-laws to allow the entry of additional crafts. It is now possible for any of the historic crafts to join the guild. This will open up the guild for potential entry by the garden, kitchen, and clothing groups as well as any other future group of fort volunteers.

The guild will also be (re)applying for 501(c)3 status to allow us to be more flexible in our fund raising.

The Williamsburg weekend demonstration will once again feature Steve Mankowski and will be held a little earlier this year. The event will once again be held in conjunction with the hands on event at Darryl Nelson's Eatonville shop. The date will be either the week of October 12th or the 19th.

## GUILD CALENDAR

### Ongoing

Yamhill Valley Heritage Center, Mc Minnville, Oregon is looking for people to work its blacksmith shop before the public. No experience required, coal forge and hand tools set up.

Contact [Bonnie](#) for details.

### Every other Saturday evening thru February Lantern Tours

Take a lantern-lit journey with a Park Ranger through a night at Fort Vancouver! Peak into the past with vignettes by costumed interpreters, and learn about your urban national park then and now. We need Blacksmith volunteers for this event - maybe Carpenters too.

Contact [Craig Webster](#) for more details.

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## Fort Vancouver Trades Guild - Scholarship Application

Carpenter's Workshop

Blacksmith's Workshop

Name: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Email Address: \_\_\_\_\_

I am an active guild member.

I have been an active volunteer for at least a year.

The skills that I gain at this class or workshop will enhance the skills that I use as a volunteer, or to support the guild.

I will pass along what I have learned by leading a hands-on workshop for Guild members.

I will write an article about my class for the Guild newsletter.

To apply for a trades scholarship, please fill out this application completely and submit it, along with a letter stating your objective(s), to any Guild Officer.

Send in your application as early as possible as we have a limited scholarship fund. Each scholarship is limited to a maximum of \$250. Scholarship applications will be reviewed by the Board of Directors and granted based on need and what best matches the objectives of the Guild.

Amount Requested: \_\_\_\_\_ Signed: \_\_\_\_\_

The Forge & Plane is the official newsletter of the Fort Vancouver Trades Guild.

Please send your comments, submissions, and suggestions to:

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Vancouver, WA 98661  
[blacksmith@iinet.com](mailto:blacksmith@iinet.com)

If you would like to be added to the electronic distribution list, please send an email request to

[blacksmith@iinet.com](mailto:blacksmith@iinet.com)

Unfortunately, due to postage and printing costs, distribution of printed copies is limited to those guild members whom specifically request a printed copy. All other copies will be distributed in pdf format.

To be successful, the newsletter needs submissions to the Members Gallery and Letters to the Editor the most. This is a place for guild members to get to know the work of the other members and to share their feelings regarding the guild.

## Fort Vancouver Trades Guild 2012-13 Officers and Board Members

### OFFICERS

President: TBD

V. President: [Tom Dwyer](#)

Secretary: [Eugene Carroll](#)  
360-887-7160

Treasurer: [Clay Ford](#)

### ELECTED BOARD MEMBERS

[Dennis Torresdal](#)

[Gary Lewis](#)

[Tom Holloway](#)

### OFF-SITE COORDINATOR

[Gary Lewis](#)

Newsletter Editor

[Craig Webster](#)

Please consider joining, or renewing your membership in, the Trades Guild using the enclosed form. While Guild membership is not required to volunteer in the shops here at the fort, the more members that we have, the more effective we can be to accomplish our goals. We are working to improve the opportunities to learn both the craft and interpretive skills. This can best be accomplished with a high rate of membership from the volunteers. You can place your completed form in Clay Ford's folder in the contact station or mail it to the address on the form.

## Fort Vancouver Trades Guild - Membership Application

Regular Annual Dues: \$10.00

Junior Annual Dues: \$4.00

Family Annual Dues: \$14.00

Honorary Annual Dues: \$0.00

Patron Members: One time \$100.00+ gift

Name: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Email Address: \_\_\_\_\_

I would like to be a regular volunteer at Fort Vancouver.

I would like to attend Special Guild Events.

I do not wish to be volunteer, but wish to support the Guild.

I am primarily interested in the Carpenter Shop

I am primarily interested in the Blacksmith Shop

I am interested in both the Blacksmith and Carpenter Shops.

To become a member, please fill out this application completely and submit it with your dues to any Guild Officer or mail to: Fort Vancouver Trades Guild, C/O Clay Ford 16119 NE 319th St., Battle Ground WA 98604

Method of Payment: \_\_\_\_\_ Receipt #: \_\_\_\_\_ By: \_\_\_\_\_