

New Jersey Blacksmiths Newsletter

Blacksmithing Workshops and Classes:

Peters Valley Craft Education Center
19 Kuhn Rd., Layton, NJ 07851 (973)948-5200
pv@warwick.net www.pvcrafts.org

Academy of Traditional Arts
Carroll County Farm Museum
500 South Center St. Westminster, MD 21157
(410)848-7775 (410)876-2667

Touchstone Center for Crafts
R.D.#1, Box 60, Farmington, PA 15437
(724)329-1370 Fax: (724)329-1371

John C Campbell Folk School
One Folk School Rd.
Brasstown, NC 28902
1-800-365-5724 www.folkschool.com

Brookfield Craft Center
286 Whisconier Road
P. O. Box 122
Brookfield, CT 06804-0122
203.775.4526

Open Forges

We are looking for members who are interested in opening their forges up to members as an open forge. This does not have to be a weekly forge as is Marshall's the others can meet once or twice a month. Please contact, Larry Brown, Editor.

We want to encourage all to join us at:

Monday Night Open Forge in N.J.

Marshall Bienstock is hosting an open forge in his shop at 7 pm almost every Monday night (Please call ahead on holidays to make sure , (732)780-0871)

Open Forge in Long Island

Sunday from 10:00 am to 6pm.
Starting the 1st Sunday in November until the end of April. Please call ahead to confirm and get directions. Ron Grabowski, 110 Burlington Blvd. Smithtown, NY (631) 265-1564
Ronsforge@aol.com

If any members have a forge at home and work in the evenings or weekends and want to open it up to help a few local guys, let me know, Larry Brown, editor, as we get requests from members who have a hard time traveling to some of the open forge locations.

Business Members

We would like to thank those who joined with our new Business Membership category .

Business dues are \$40

Please show them our support

John Choborda, Pine Barrens Forge
231 Morrison Ave., Hightstown, NJ 08520
609-443-3106 JChob@earthlink.net

Grant Clark, GWC Forge
PO Box 158 Perrineville NJ 08535
732 446-2638, 732 446-2638

Eric Cuper Artist Blacksmith
109 Lehman Lane, Neshanic Station, NJ 08853
908 642-6420 ericcuper@msn.com

Bruce Hay, Jr.
50 Pine St., Lincroft, NJ 07738

Jayesh Shah, Architectural Iron Design
950 S. 2nd St., Plainfield, NJ 07063
jay@archirondesign.com

Louise Pezzi, Blacksmith
1241 Carpenter St
Philadelphia, PA 19147
215 336 6023 pezziandjr@gmail.com

Search

I am looking for a #250 fisher anvil in good shape. If you have one for sale or run across one, contact me; Larry Brown, NJBA Editor. (718) 967-4776

BLACKSMITH TOOLS FOR SALE!

John Choborda

Has a large selection of tools for sale.

Anvils – Forges - Leg Vices—Blowers

Tongs – Hammers

and/or resurfaced Anvils

Call John for prices and availability

Evening 609-610-3501

by Rick Hartline, NC ABANA

Start by using a piece of tool type steel, (I used a piece of jack hammer bit). Draw it out to a rectangle with a tang to fit into a ½ inch pipe. Cut/saw at **A/B**. **NOTE:** The final thickness of **B** is determined by the shortest rivet length to be cut. I used ½” for both but you may want to thin **B** after cutting.



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What do you do when you're 'stuck' for a good design idea?

Back off, do something else, or put off working on it for a day. You'll see it in a new way when you get back to it. Work backwards, removing some of the layers of the design, then start rebuilding it in a new way. Start over using a new approach, but incorporate some elements of the original idea. Jerry Hoffman

Here is something I do with my students. Get a piece of paper, and make lines. At first, there are only scribbles, but then... a rabbit or perhaps a candlestick. I call this the "school of looking." Most people run around with closed eyes, but designs are everywhere. Sometimes the designs are very small... once I did a piece for a doctor, so I found pictures of cells through an electron microscope, and designed from there. It wasn't my idea... God made it. Get out and look... work with open eyes. Manfred Bredohl

When stuck for a design idea, my advice is above all, be persistent, keep trying for the 'right' idea. Alternatively, give it a break and relax, then try again later. Look to nature, to history, to whatever inspires you. Sometimes that muse is just plain hard to find, keep looking. And draw. Draw and draw and draw. I use a cheap fax/copy machine to 'freeze' drawings before I change them and tracing paper to make changes, etc. Though it's true that the first idea is often the best, it often needs a lot of evolution to make it work at a specific site. Scott Lankton

When I'm stuck on a design, I stop what I'm doing & go on to something else. Then I come back later, sometimes the same day, or it may be several days. Regardless, I just wait until I feel the urge to finish the design work. Good designs flow, they can't be forced. Enrique Vega

•When I am stuck for a good design idea, I go to Francis Whitaker's books, the Schmirler books, Yellens stuff and I look at the examples. I always find something that will be fun, different and fill the bill. I never stay stuck long...ever. Dorothy Stiegler

I often ask my students to consider certain design exercises by requiring them to write down the design criteria before drafting an idea: How must it function and how should it relate to a given piece of architecture or a specific site? ... dozens of details, not yet considered, quickly stack up on the paper. Carefully noting all the functional and aesthetic requirements clears the mind of superfluous ornament, allowing room for essential expression. This process results in details that enliven the piece and, due to their necessity, are inexplicably missed when they are not present at all. When this list is drawn up, often an appropriate design unfolds almost miraculously. Tom Joyce, from an interview by Rob Edwards, Anvil Magazine, October 1999

I start by clearing my desk for action, getting rid of extraneous material, sharpening my pencils, getting my favorite pens all laid out and ready to use. I make myself a nice cup of tea. I play music that inspires me. I may get out some books and just spend some time looking through them. I doodle, write notes to myself on rolls of architects tracing paper (cheap). I lay out the pictures that I have taken of the site. With my new digital camera I can tape a blown up picture to my desk, cover it with tracing paper and doodle designs imposed upon the building, or inside in the kitchen, fireplace, etc. Finally, I trust my dreams. If I go to sleep thinking about the design problem for several nights, I will surely dream some answers in the early morning. Then after doing step number one above, the rest is a cinch.... Nol Putnam

Hammers Blow 8 3 SUMMER 2000

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Heat-Treating Data for Selected Tool Steels

(All temperatures are in °F)

Steel Notes	Forging Temperature (start/stop)	Anneal From	Harden From'	Quench In	Temper Temperature'
W-1, W-2	1900-1825/1500-1450	1425-1400	1450-1410	water/brine	300-600, 3
O-1	1900/1500	1450	1475	oil	300-600, 5, 8
O-6	1950/1500	1500	1450-1480	oil	300-1000, 4, 8
L-6	1900/1650	1375	1500-1550	oil	200-700
A-2	2050/1700	1650	1775	air	300-1300, 4, 5, 8
A-6	2025/1675	1375	1525-1600	air	200-1000, 5, 8
D-2	2050/1700	1650	1850	air	900-1200(900-960 Rc59)4,5,6,7,8
D-3	1900/1700	1600	1740	warm oil	400-1300, 5, 8
D-5	2000/1750	1650	1850-1875	air	300-1000, 4, 5, 7, 8
S-1	2100/1660	1475	1750	oil	300-1200, 4, 9
S-3	1900/1700	1375-1525	1600 (1450)	oil (water)	300-400, 10
S-5	1950/1650	1450	1600	oil	300-1300, 9
S-7	2050/1700	1550	1725	air <2' inch	300-1300, 4, 5, 6
H-13	2150/1650	1600	1850	air	1050-1150, 4, 5
6150	2250/1950	1550	1550--1600	oil	400-900

Notes:

1. Variations in temperature may depend on size, and higher temperatures may give greater hardness at the expense of increased grain size.
2. Higher temperatures give higher toughness and lower hardness. Generally the lowest temperature gives about Rc 60 and the highest about Rc 30.
3. W-1 and W-2 come in different carbon contents. The higher the carbon, the lower the forging, annealing, and hardening temperatures. This also applies to the SAE 10xx carbon steels.
4. Steel needs an intermediate temperature (about 1200°) soak before heating to final hardening temperature.
5. Controlled atmosphere furnace preferred, but packing in a neutral medium like cast iron chips is also possible to prevent decarburization. Air hardening steels may be wrapped in stainless steel foil during heating to prevent decarburization and scaling.
6. Large sizes (generally >2 1/2-- 6 inches) are quenched in oil
7. Draw temper twice, with the second draw about 50° lower than the first.
8. Furnace cooling required for annealing (20 °F/hour maximum). It is not realistically possible to anneal these steels properly in a blacksmith shop.
9. May be quenched in water for simple sections.
10. There are different heat-treating procedures (oil/water/case harden/temperature) available for different purposes.

Submitted by Jan Kochansky Blacksmith Guild of the Potomac March/April 2007

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ALLOY CONTENT OF VARIOUS TOOL STEELS SUPPLIED BY NOTED KNIFE SMITH

WAYNE GODDARD

	C	Mn	Si	Cr	Ni	Mo	Co	V	W
Vascowear	1.12	0.30	1.20	7.75	/	1.60	/	2.40	1.10
A-7	2.25	0.70	0.40	5.25	/	1.15	/	4.75	1.25
T-15	1.50	0.25	0.25	4.50	/	0.50	0.50	5.00	12.50
M-2	0.85	0.25	0.25	4.00	/	0.50	/	1.90	6.00
BG-42	1.15	0.15	0.30	14.50	/	4.00	/	1.20	/
CPM T440-V	2.20	0.5	0.5	17.50	/	0.50	/	5.75	/

	C	Mn	Si	Cr	Ni	Mo	V	W
1095	0.95	0.40	/	/	/	/	/	/
52100	1.10	0.35	0.35	1.50	/	/	/	/
O-1	0.90	1.60	/	0.50	/	/	/	0.50
L-3 (BB)	1.00	/	/	1.50	/	/	0.20	/
L-6	0.75	0.70	0.25	0.80	1.50	0.30	/	/
Alpha Knife– Cham- paloy	0.66	0.39	0.20	0.74	1.47	0.12	/	/
8670M	0.75	0.50	0.25	0.40	0.80	0.08	/	/
Large Round-saw Uddeholm	0.80	0.30	0.25	0.20	2.20	/	/	/
Sandvik Bandsaw 15N20	0.75	0.25	0.35	/	2.00	/	/	/
5160	0.60	0.80	/	0.80	/	/	/	/
W-2	1.00	0.35	0.35	/	/	/	0.20	/

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Shady Grove Blacksmith Shop . Dick Nietfeld . www.blksmith.com 4/11/2007

HEAT TREATING STEEL - QUICK GUIDE

Temperatures in Degrees Fahrenheit

Type of Steel	1045	1095	4140	5160	5210 0	L6	O1	A2	H13	S1	S7
Quenching medium	Water	Water	W& Oil	Oil	Oil	Oil	Oil	Air	Air	Air/ Oil	Air/ Oil
Forging Preheat	None	None	1250	None	None	None	None	1250	1400	None	None
Not Over	2275	2100	2250	2200	2100	2000	1950	2000	2100	2050	2050
Not Under	1600	1500	1600	1600	1700	1550	1550	1700	1650	1600	1700
Normalizing (Air)	1650	1575	1600	1600	1625	1600	1600	Do Not	Do Not	Do Not	Do Not
Annealing:	1550	1475	1550	1450	1450	1400	1400	1800	1600	1475	1500
Down To	1200	1200	1200	1200	1275	1000	1275	1000	1000	1000	950
Max. Drop/Hour	50	50	25	Air cool	10	40	40	20	50	40	25
Preheat Soak	None	None	None	None	None	None	1200	1200	1175	1200	1250
Hardening Temp	1550	1475	1575	1525	1550	1550	1475	1750	1700	1700	1725
Low Temp Required before Tempering	100	150	150	150	125	125	175	150	125	150	150
Tempering: After Quenching Temper All to At least 300 Degrees F											
45RC	600	800	750	425	800	1000	Not Rec	1200	1100	1100	1150
50RC	400	700	600	350	650	900	Not Rec	900	1050	800	875
55RC	As Quenched	600	As quenched	300	500	700	600	550	As Quenched	450	600
60RC		400		As Quenched	350	400	475	400		As Quenched	300
62RC or Higher		As Quenched			As Quenched	As Quenched	As Quenched	As Quenched		As Quenched	As Quenched

Industrial heat treating practices such as soak times, Variations for steel thickness, alternate hardening temperatures, alternate quenching mediums and temperatures, various annealing practices and more accurate tempering temperatures will be

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EFFECTS OF COMMON ALLOYING ELEMENTS IN STEEL

By definition, steel is a combination of iron and carbon. Steel is alloyed with various elements to improve physical properties and to produce special properties such as resistance to corrosion or heat. Specific effects of the addition of such elements are outlined below:

Carbon (C) is the most important constituent of steel. It raises tensile strength, hardness, and resistance to wear and abrasion. It lowers ductility, toughness and machinability.

Manganese (Mn) is a deoxidizer and degasifier and reacts with sulfur to improve forgeability. It increases tensile strength, hardness, hardenability and resistance to wear. It decreases tendency toward scaling and distortion. It increases the rate of carbon-penetration in carburizing.

Phosphorus (P) increases strength and hardness and improves machinability. However, it adds marked brittleness or cold-shortness to steel.

Sulfur (S) improves machinability in free-cutting steels, but without sufficient manganese it produces brittleness at red heat. It decreases weldability, impact toughness and ductility.

Silicon (Si) is a deoxidizer and degasifier. It increases tensile and yield strength, hardness, forgeability and magnetic permeability.

Chromium (Cr) increases tensile strength, hardness, hardenability, toughness, resistance to wear and abrasion, resistance to corrosion, and scaling at elevated temperatures.

Nickel (Ni) increases strength and hardness without sacrificing ductility and toughness. It also increases resistance to corrosion and scaling at elevated temperatures when introduced in suitable quantities in high-chromium (stainless) steels.

Molybdenum (Mo) increases strength, hardness, hardenability, and toughness, as well as creep resistance and strength at elevated temperatures. It improves machinability and resistance to corrosion and it intensifies the effects of other alloying elements. In hot-work steels and high speed steels, it increases red-hardness properties.

Tungsten (W) increases strength, wear resistance, hardness and toughness. Tungsten steels have superior hot-working and greater cutting efficiency at elevated temperatures.

Vanadium (V) increases strength, hardness, wear resistance and resistance to shock impact. It retards grain growth, permitting higher quenching temperatures. It also enhances the red-hardness properties of high-speed metal cutting tools.

Cobalt (Co) increases strength and hardness and permits higher quenching temperatures and increases the red hardness of high speed steel. It also intensifies the individual effects of other major elements in more complex steels.

Aluminum (Al) is a deoxidizer and degasifier. It retards grain growth and is used to control austenitic grain size. In nitriding steels it aids in producing a uniformly hard and strong nitrided case when used in amounts 1.00% -1.25%.

Titanium, Columbium, and Tantalum (Ti, Cb, Ta) are used as stabilizing elements in stainless steels. Each has a high affinity for carbon and forms carbides, which are uniformly dispersed throughout the steel.--Thus, localized precipitation of carbides at grain boundaries is prevented.

Lead (Pb) while not strictly an alloying element, is added to improve machining characteristics. It is almost completely insoluble in steel and minute lead particles, well dispersed, reduces friction where the cutting edge contacts the work. Addition of lead also improves chip-breaking formations.

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EXPIRATION DATE _____

Join ABANA or Check out other area chapters!

Northeast Blacksmiths Association

Northeast Blacksmiths holds its meets twice a year at the Ashokan Field Campus in New York State.

The Ashokan campus is located in Olivebridge, N.Y., several miles west of Kingston, N.Y. The meets are held the first weekend in May and in the first weekend in October every year. The main demonstration is in the blacksmith shop and there is a "Hands On" workshop for beginners. A main demonstrator is brought in for each meet, food and bunk-house style lodging are provided as part of the cost of the weekend long meet.

Contact : Tim Neu

to register for hammer-ins

or subscribe to the newsletter;

Tim Neu, Ashokan Field Campus,

447 Beaverkill Rd.

Olivebridge, N.Y. 12461 [914]657-8333

For more information check out the web site; <<http://nba.abana-chapter.com/>>

Join The Pennsylvania Blacksmiths Association!

Name _____

Address _____

City, State, Zip code _____

Home / work Phone # _____

E-mail (optional) _____

New Member ☐ Renewal ☐

Do you have any particular skills (welder, accountant, carpenter, doctor) that may be helpful to the group or membership?

Suggestions for PABA demonstrations

What is your skill level?

☐ Beginner ☐ Intermediate ☐ Advanced ☐ Professional

Membership paid by ☐ Cash ☐ Check # _____

Send your completed application with \$ 20 (one year dues) to;

PABA Treasurer, Buzz Glahn

1667 Wyomissing Rd.

Mohnton, PA 19540

(make Checks payable to PABA)

PABA Membership Application

Membership is from Jan. 1 — Dec. 31

New Jersey Blacksmiths Association
Attn: Larry Brown, Editor
90 William Avenue
Staten Island, New York 10308



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How to Join or Renew your Membership in NJBA:

NJBA Dues are \$20 per year.

NJBA Business Dues are \$40 per year

Please make your check out to: "NJBA"

Please mail checks to:

NJBA, P.O. Box 224, Farmingdale, NJ 07727-9998

Please include payment with the information listed below. You will receive a postcard confirmation of your membership, and will receive a newsletter within a month.

NJBA's "year" runs from June to June. If you join mid-year, the postcard will offer a prorated dues option which will then allow you to extend your membership till the following June. The following information will be listed in a roster available to other members.

Name _____ Home Phone _____
Address _____ Day Phone _____
City _____
State _____ Zip _____
E-Mail _____ Skill Level (optional) _____
Comments _____