

Lewis and Clark War Axes By Eddie Rainey

The Lewis and Clark expedition was the first federally funded scientific expedition in the United States. Prior to their departure in 1804 Lewis and Clark spent almost one full year planning and gathering supplies for their journey across America. They had to be sure they had extra supplies and gifts to trade with the Indians they expected to encounter.

The first leg of the journey took them north to Bismarck, North Dakota. They reached the fort just in time to prepare for the worst winter on record. The fort was equipped with a blacksmith shop where the first trade axes were made to trade with the Mandan Indians. Because of a late run of the Buffalo the Core of Discovery found that trading with the Indians was their best source for food. The Mandan Indians were experienced farmers and were willing to trade food for metal objects. The Mandan village was located just outside the fort along the river and was the hub of trading activity. The population was the same as Washington, D.C.

These trade axes became the status symbol for Indian chiefs. Almost all photographs of Indian Chiefs shows the trade axe or tomahawk held across the chest. Below is the details of the construction of an authentic Lewis and Clark trade axe.

- The length of the axe is 9"
- The cutting edge is 6"
- The eye for the handle has a diameter of 1" - 1 1/4"

—Start with 3/16" plate 9" in length and 6" in height tapered to 1 1/4"

The eye is made from 1/4" x 1" flat bar 5 3/4" in length. First find the center of the bar and measure 2" from center both directions and mark with a center punch. This gives you 4" for the eye and approximately 3/4" for the scarf.

From the center of the bar forge the bar to 1 1/4" in width. As you widen the bar to 1 1/4" leave a ridge line in the center between the center punch marks.

Now form the scarf by forging the ends into a fish tail. Your piece should now resemble a bow tie. Heat and bend over the horn until your scarfed ends almost meet. Insert the 3/16" plate between the scarfs and line the plate up with the center punch marks. Now forge weld the 2 pieces together. Now you are ready to drift the eye. You want an hour glass shape to the eye. You should drift the eye round using a drift with a diameter of 1 1/4"

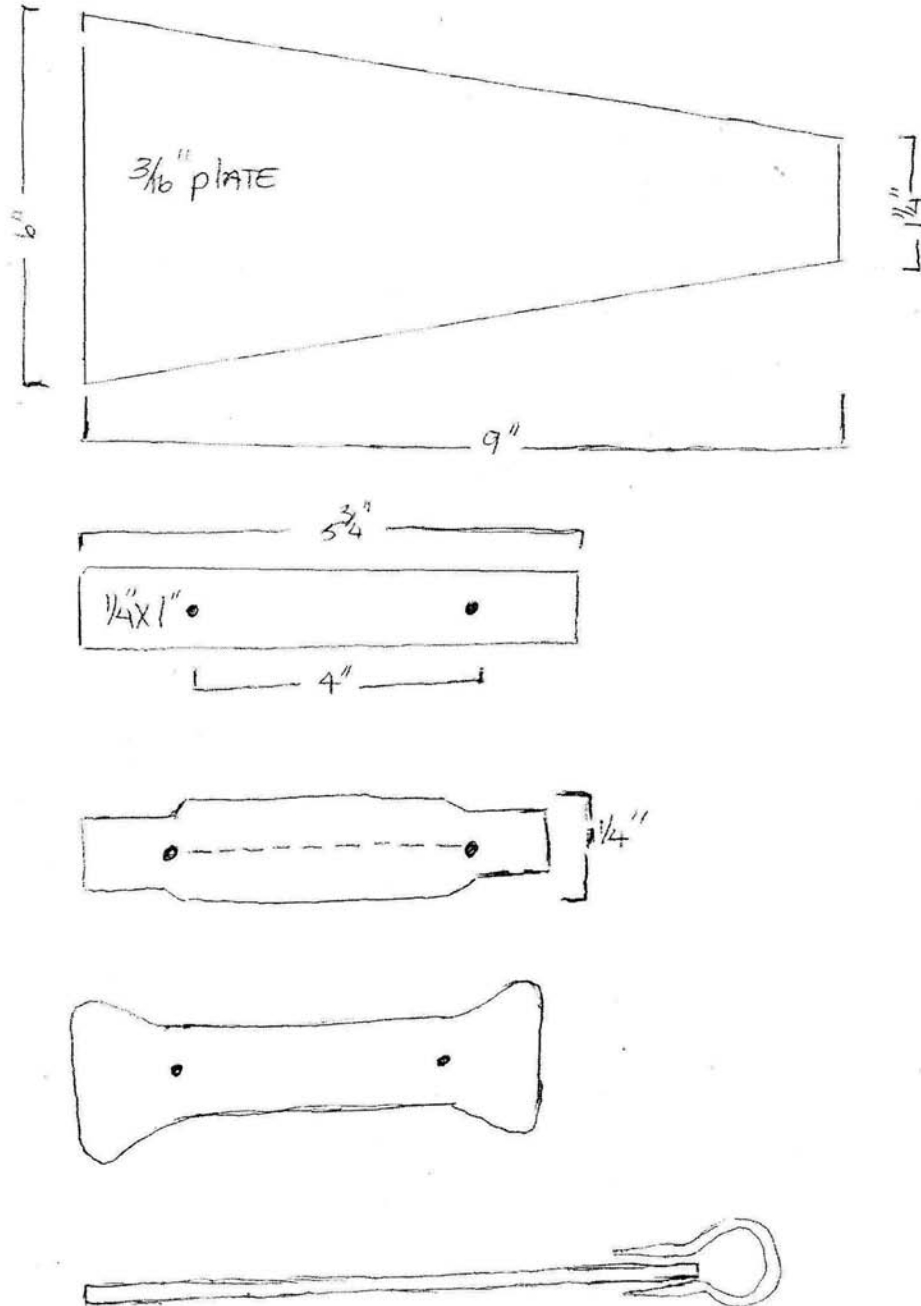
You may have some clean up around the eye to do from the forge weld.. Hammer dress the edges and the taper to the eye making a smooth transition from eye to the body of the axe. Use borax to clean by heating until dull red and wire brushing. Forge the cutting edge to 1/2 inch taper. You can decorate the axe by punching round holes into the body of the axe. Some had weeping hearts which was a favorite for some tribes.

-From the OBG newsletter– continued on the next page

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Apply a good coat of wax and your authentic reproduction of a Lewis and Clark trade axe is ready for a handle. *The* handle can be decorated as well, Good forging a let your creativity soar

Thanks to The OBG for sponsoring the scholarship that made this learning experience possible. Thanks to Jim Batson who taught the class on this unique and fun forging experience.



New Jersey Blacksmiths Newsletter

A BLACKSMITH'S GROCERY LIST

by: Tommy Ward

When grocery shopping with my wife I sometimes amuse myself by searching for common household substances that might be useful in metalworking. Here's what I have come up with. If you have a favorite blacksmith's "recipe" using materials found in a supermarket let us know and we'll publish it in a future issue.

Aluminum foil - Melts at about 1220 F. Thickness of household brands is around .0007" or less. In addition to its obvious insulating and reflective properties, aluminum foil can be used in mechanical work as a shim stock for adjusting the clearance of bearing or mating surfaces.

Ammonia - A general household cleaner that can also be mixed with various other materials to alter the color of copper and steel.

Baking soda - (sodium bicarbonate) Can be used to neutralize acids. Mix with water to form a paste, or add to water to make a dilute solution. Don't confuse with baking powder, which combines sodium bicarbonate with other additives.

Beer - Useful both in and outside the shop to improve or alter the disposition of the metalworker. Most any brand can be effective.

Beeswax - Used as a "finish" on ironwork. Usually rubbed on the metal while hot. Also makes a good dry lubricant for drill bits and saw blades.

Borax - "Twenty Mule Team" brand borax is widely used as a flux for forge welding.

Camphor - When placed in tool chests the vapors emitted by camphor blocks help to prevent rusting of fine tools. May not be available in grocery, but better pharmacies should have it.

Catsup - "Gentle" cleaner for brass. Mix 50/50 with water and immerse small items from two hours to overnight. Leaves a soft, matte finish. To avoid damage, don't leave items in the solution for long periods, as acid in the catsup will attack the zinc in the brass.

Cheesecloth - A lint free open weave fabric. Fold into a small pad, load with an appropriate solvent, and wipe surfaces for a lint free preparation to finishing. A small pad is ideal for the lint free application of stains to surfaces. Also use to strain paint or other liquids. Use to make a "tack rag" for wiping dust from surfaces prior to painting (dip a piece about 12" square into clean water and squeeze dry. Mix 3 tbsp. varnish with some paint thinner and sprinkle onto material. Knead the cloth until it's saturated with the mixture. Don't overdo it. A tack rag should be tacky enough to pick up dust but not stick to surfaces).

Citric acid - A mild acid present in many fruits, vegetables, and carbonated beverages (the highest concentration is in lemons and limes). May also be found in concentrated form in the baking or canning sections of the grocery. Can be used to remove rust from tools. Mix with a little alcohol (rubbing alcohol is fine) and a dab of detergent and apply to rusted surfaces. Heavy rust may require immersion overnight. Rinse and scrub off with a fine Scotch-Brite pad. Surfaces should be clean of oil before applying the solution.

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Club soda - To improve their performance, substitute club soda for water when mixing soluble oil type cutting fluids used in drilling or machining.

Coco butter soap - Can be used as a lubricant in metal spinning.

Dishwashing liquid - ("Dawn Blue" preferred). An ingredient used in making Robb Gunter's "Super Quench" formula for hardening mild steel. For details go to: <http://www.cvbg.org/tips/superquench.PDF>

Eggs - Use to test a brine quench for proper salinity - toss a couple of uncooked eggs into the water as salt is added. Eggs will float when proper salt level is reached.

hand soap - A bar of soap makes a good lubricant. Dry rubbing some on sliding surfaces will improve the operation of threaded fasteners, nails, saw blades, drawer and window slides, etc.

Hydrogen peroxide - Commonly available in a diluted solution of about 2.5% to 3%. It is a weak acid and strong oxidizer. Primarily used as a disinfectant but also can be used to remove certain stains and to bleach certain materials. Used in metalworking to color some metals and to remove rust from iron. Several formulas for its use can be found on the Internet.

Kitty litter - Can be used in place of "oil dry" to absorb liquid spills.

lard - An effective cutting lubricant for drilling and machining - particularly with "tougher" metals. Use straight or mix with 30 wt. nondetergent motor oil.

Lye - Also known as sodium hydroxide or caustic soda. Makes a very effective paint and "grunge" remover when restoring machinery. Lye is getting hard to find due to concerns over its use in making illegal drugs. However it can sometimes be found in stores packaged as "Roebuck Heavy Duty Crystal Drain Opener" which is 100% lye, or "Drano Kitchen Crystals" which contains about 54% lye. Mix one can of Drano Crystals with 3-5 gallons of water and immerse parts in the solution. The Roebuck product may require less due to its higher concentration of lye. Rinse parts thoroughly immediately after removal from the solution. For ferrous metals only - don't use on aluminum or brass. Lye is reactive and dangerous, so appropriate caution is advised.

Mothballs - Can be used in a toolbox to prevent rust - see camphor. oil soap - Can be used as a lubricant in metal spinning.

Paraffin - Use to make a lubricant for metal spinning. Heat (carefully - use a double boiler) and mix together 3 parts beeswax, 1 part paraffin, and one part toilet bowl sealing wax. When cooled, a paste is formed that can be applied to the work face of objects in the metal spinning process. Also can be used as an "indoor" finish on iron. Apply alone or mix with other substances to create a finish. Makes a decent lubricant for drill bits. Use melted paraffin to coat fine tools and prevent rust during long-term storage,

Peanut oil - Has the highest flash point of the commonly available vegetable oils. Sometimes used as a quench for oil hardening steels. Also useful as a "gentler" method of heating parts when shrink fits are called for in mechanical work. Be advised that vegetable oils will eventually become rancid, while mineral oils will not.

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Petroleum jelly - A highly refined light weight lubricant. Insoluble in water, but can be dissolved by some solvents. Commonly used as a topical dressing for scrapes, burns, and chapped or dry skin. Rubbing some into the hands before beginning dirty tasks will make cleanup easier upon completion of the work. Coat fine tools with petroleum jelly to prevent rusting.

Pine sol - "Friendly" and effective grease remover and cleanser for machinery and other surfaces.

Potato - Use to test a brine quench for proper salinity. Toss a few uncooked potato chunks into the mix as salt is added and the potatoes will float when proper salt level is reached.

Rubbing alcohol - Rubbing alcohol contains a concentration of 70% - 90% isopropyl alcohol mixed with water (some brands may use ethyl alcohol). Primary use is for first aid (alcohol should not be used on open wounds, but to clean areas around the wound - use hydrogen peroxide on the open wound). Also effective as a cleanser or degreaser for metal. Good for a painting prep since it evaporates quickly and leaves no film on treated surfaces.

Salt - Mix with water to improve its quenching ability. The backyard rule of thumb is between 5% and 12% salt in water. Also can be added to vinegar to make a brass, copper, or iron cleaner.

Swimming pool pH balancer - (sodium bisulfate) Use to make a dip for cleaning copper after working, soldering, or brazing. Usually available in stores in 5 lb. containers labeled "pH reducer or pH negative". Mix one to two pounds of chemical with eight gallons of water in a plastic container such as a trashcan. Submerge items in the solution for thirty minutes to an hour then rinse thoroughly with water. The solution can also be used to clean steel, but use a separate container - don't contaminate the copper bath with other materials.

Toothpaste - Use an old style paste type for a very fine polishing compound. Thin with water if needed.

Vinegar - Common vinegar is about 5% acid and can be used to remove rust from steel and to clean oxidation from copper and brass. Adding some salt improves its effectiveness. Will attack the zinc in brass, so to avoid damage don't leave brass items in vinegar too long. A number of formulas for its use in metalworking can be found on the Internet.

Washing soda - (sodium carbonate) Available in some stores as "Arm & Hammer Super Washing Soda". Mildly caustic. Used to prepare the electrolyte for an electrolysis rust removal process. See following the link for details on the electrolysis technique:
<http://www.rowand.net/Shop/Tools/Electrolysis.htm>

Note: As concerns for liability increase and consumers demand "easier to use" products, some of the listed substances may no longer be available in your grocery. However they should be stocked in better pharmacies and home improvement stores. Some of these materials can be toxic, cause skin damage, or create toxic fumes; particularly when mixed with other ingredients. The author and the MFC claim no expertise in the use of chemicals and strongly encourage users to familiarize themselves with proper handling techniques and the potential hazards that may be associated with these materials. Always provide adequate ventilation and wear appropriate safety gear when handling chemicals.

MISSISSIPPI FORGE COUNCIL THE UPSET SEPTEMBER 2007

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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
Carrol 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 Chobrda, 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 ericuper@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 Chobrda

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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 _____