



# HOUSTON AREA BLACKSMITH'S ASSOCIATION INC.

DRAFT

## *HABA TRAINING PROGRESSION*

### *The HABA Training Progression Guidelines*

The *HABA Training Progression* is about learning the art and craft of blacksmithing in a self-selected structure and recording acquired knowledge and skills in a fun and creative environment for the hobbyist and professional smith.

All HABA Members who wish to begin the **HABA Training Progression** are invited to give their names to the **HABA Training Progression** Chairperson. The Chairperson, with the concurrence of the HABA Board, will create two to four person panels to review the work created by participating members. The progress of each person in the **HABA Training Progression** will be recorded and be reported to the membership on a regular basis.

Some form of recognition, a certificate for example, will be offered to each person completing one module. There will be a total of eight modules. They are the Introduction Module, Basic Module, the Intermediate Module, and each one of the five required Projects described in the Advanced Module.

Each person involved in the **HABA Training Progression** as a participant or member of the review panel must agree to enjoy himself or herself. The **HABA Training Progression** is intended to be an enjoyable self-motivating experience.

Any person completing the **HABA Training Progression** will automatically become a lifetime member of HABA.

Inspiration for the **HABA Training Progression** grew from a perceived need for some form of blacksmithing training and a motivational way for members to document knowledge and skill achievement. Many of the elements in this **HABA Training Progression** are adapted from the Blacksmithing Standards developed by the Appalachian Blacksmiths Association, similar information found in many other smithing publications and experience.



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The Progression is defined as four levels commonly recognizes within the art:

- I. Introduction
- II. Basic
- III. Intermediate
- IV. Advanced

At the conclusion of each phase is a signature block for a designated HABA reviewer and date. When the Progression is complete, the HABA President will sign and date the document, and arrange for appropriate recognition of the Member.

Here is some suggested reading:

*New Edge of the Anvil* by Jack Andrews, Skipjack Press 1994  
*Practical Blacksmithing and Metalworking Second Edition* by Percy W. Blandford, TAB Books 1988  
*Drawing on the Right Side of the Brain* by Betty Edwards, J.P. Tracher Inc. 1979  
*The Complete Metalsmith* by Tim McCreight, Davis Publications Inc. 1991  
*A Blacksmithing Primer* by Randy McDaniel, Dragonfly Enterprises 1988  
*The Contemporary Blacksmith* by Dona Z. Meilach, Schiffer Publishing Company 2000  
*Practical Projects for the Blacksmith* by Ted Tucker, Rodale Press 1980

HABA Website:

<http://www.habairon.org>



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### I. Introduction

#### Shop Safety

- Describe first aid techniques for cuts, burns, abrasion and other shop related injuries.
- Describe methods of hearing, sight and body protection and why they are necessary.

#### Blacksmithing Tools

Identify hammers, forges, anvils, vises, tongs, fullers, shears, pinches, jigs, drifts, bending forks, files, rasps, dies, brushes, hardies, bicks, swage blocks, forge tools, etc.

#### Hammer Techniques

Demonstrate grip, posture and full face, half face, edge, back face and shearing hammer blows.

#### Basic Metallurgy

- Describe the properties and use of wrought iron, mild steel, carbon and tool steels.
- Describe the classifications of cast-iron, brass, copper and aluminum.
- Describe sheet and plate gauging for ferrous and non-ferrous metals.
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#### Fire and Fuel

- Describe the constituents of good forge coal.
- Describe three different types of coal, three types of flame within a fire, three coal fire starting techniques and three fire maintenance techniques.
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#### The Anvil

Identify the parts, setup, use and maintenance of anvils.

#### The Vise

Describe at least two different kinds of shop vises, the primary use of each and general vise maintenance.

#### Sketching

Make a full size sketch of two planned pieces.

Date Completed

Signature



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### II. Basic

**Drawing Out**

Draw out a bar to a point.

**Upsetting**

Upset a bar to at least 1-1/2 times the diameter or width on the end and in the middle.

**Bending**

Make a ring out of bar or flat stock.

**Splitting**

Split a bar with a hot cut in the middle and at the end of the bar.

**Punching**

Punch a hole one half the width of the stock.

**Spreading**

Spread the end of a bar at least four times the width of the bar.

**Twisting**

Make three different twists in one square bar.

**Cutting and Shearing**

Demonstrate how to use the hot cut, cold cut, hacksaw, tinsnips, bench or floor shear.

**Drifting**

Make a drift and use it to smooth, shape or enlarge a hole.

**Sketching**

Locate a picture or piece of work of a master blacksmith. Sketch that piece in full size or at least large enough to fit an 11" x 17" page.

Date Completed

Signature



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<b>III. Intermediate</b>
<p><b>Bending</b> Make a square corner right angle bend in square stock.</p>
<p><b>Hot Rasping, Filing</b></p> <ul style="list-style-type: none"> <li>• Hot rasp the end of a bar to a reasonable straightness and evenness that was first cut with a hardie.</li> <li>• Show a piece of work that is filed to a smooth flat surface</li> </ul>
<p><b>Sinking, Raising or Metal Spinning</b></p> <ul style="list-style-type: none"> <li>• Sketch a hemispherical or hollow object and estimate the time and cost of making the object.</li> <li>• Make a hemispherical or hollow object made from flat sheet using any one technique.</li> </ul>
<p><b>Drilling, Tapping, Die Work and Threads</b></p> <ul style="list-style-type: none"> <li>• Drill and tap a hole.</li> <li>• Thread the end of a bar with a die</li> </ul>
<p><b>Heat Treating, Hardening, Tempering, Annealing, Case Hardening</b></p> <ul style="list-style-type: none"> <li>• Demonstrate how to properly anneal, harden and temper carbon tool steel.</li> <li>• Demonstrate how to caseharden mild steel.</li> <li>• Describe the colors for tempering.</li> <li>• Make a tool that is heat-treated and that will cut or forge mild steel without breaking or deforming on the working end.</li> </ul>
<p><b>Heading</b></p> <ul style="list-style-type: none"> <li>• Head two bolts, one square headed and one hex headed.</li> <li>• Head a nail.</li> <li>• Head a rivet.</li> </ul>
<p><b>Fullering, Grooving, Veining, Set Hammering</b> Show examples of each technique or if used as an intermediate technique, describe how and why the technique is used.</p>
<p><b>Jigs and Dies</b></p> <ul style="list-style-type: none"> <li>• Make a jig and a forming die to do repetitive production work.</li> <li>• Show examples of the work produced with each tool.</li> </ul>
<p><b>Forge Welding</b> Demonstrate at least three different and successful forge welding techniques at a HABA meeting.</p>
Date Completed
Signature



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<b>IV. Advanced</b>
<p><b>Guidelines for Projects</b></p> <ol style="list-style-type: none"> <li>1) At least five projects need to be completed.</li> <li>2) Each project needs to incorporate the elements specified in each Project Description.</li> <li>3) Each project can incorporate additional elements the craftsperson wishes to include.</li> </ol>
<p><b>Project Description-1</b> Sketch a full scale drawing for something that includes:</p> <ul style="list-style-type: none"> <li>• At least one design feature with two or more elements.</li> <li>• The techniques of drawing, upsetting, spreading, bending, twisting, cutting, punching and splitting.</li> <li>• Estimate the time and cost of completing the project.</li> <li>• Use the shop drawing to create the sketched piece.</li> </ul>
<p><b>Project Description- 2</b> Create one pair of something that includes a forged square corner, a threaded connection, a forge weld and a hemispherical or hollow object. (Note: The requirements of Project 2. and 3. may be combined into a single project.)</p>
<p><b>Project Description- 3</b> Create one pair of something that incorporates a mortise and tenon connection, a collar, a scroll and a rivet connection. (Note: The requirements of Project 2. and 3. may be combined into a single project.)</p>
<p><b>Project Description - 4</b> Create a piece that gets accepted into a juried art show.</p>
<p><b>Project Description - 5</b> Create a piece that receives recognition at a nationally recognized and juried art show.</p>
Date Completed
Signature

Signature \_\_\_\_\_ Date \_\_\_\_\_

**HABA President**