MONTGOMERY COUNTY CARVERS

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Carving Knives - Perspective

Bert Bleckwenn

February 15, 2024

Agenda

- Objectives, Scope, My Credentials
- Key Points
- Carving Knife Basics
  - Knife Elements
  - Carving Knife Anatomy – What's Important
  - Materials
  - Construction
  - Profiles
  - Bevel Angles
- Carving Knife Options
  - Knife Brands
  - Knife Sources
  - Knife Styles & Sizes
  - Carving Knife Prices and True Costs
- Diagnostics and Maintenance
- Make Your Own Carving Knife

Objectives, Scope, Credentials

- **Objectives**
  - **Education** - Understand what makes a good carving knife
    - Knife elements and nomenclature
    - Attributes of a quality carving knife
    - Brands, Sourcing
  - **Awareness** - Why your knife works well, or not so well
    - Diagnostics/Actions - What to do to improve your knife's effectiveness
  - **Recognition** - What to look for in your next knife
  - **Options** - What your knife options are
- **Scope**
  - In Scope: Carving and Whittling
  - Out of Scope: multi-function carving knife, pocketknifehunting knife, bushcraft knife, kitchen knife
  - Another Day - spoon knife/crook knife
- **Credentials**
  - Wide variety of knives owned and used
  - Maker of knives
  - YMMV -"Your Mileage May Vary!", true specs are elusive!

True Specs are Elusive!

flexcut knife rockwell hardness

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It makes a great beginners' knife. The blade is made with Flexcut's high quality spring steel tempered to a hardness of **Rc 59-61**.

Flexcut Cutting Knife - The Woodsmith Store

The Woodsmith Store

The **58-60** (Depending on blade style) HRC hardness of the blades holds a very sharp edge, and is easy to maintain on a strop.

Flexcut Carving Knives - Tools for Working Wood

Tools for Working Wood

Flexcut's steel equates to a Rockwell hardness (HRC) of between **55-58**–but keep in mind that the ideal HRC for a carving/whittling knife is 58-62.

Flexcut 3-Piece Carving Knife Starter Set In-Depth Review - Woodcrafter's Corner

woodcrafterscorner.com

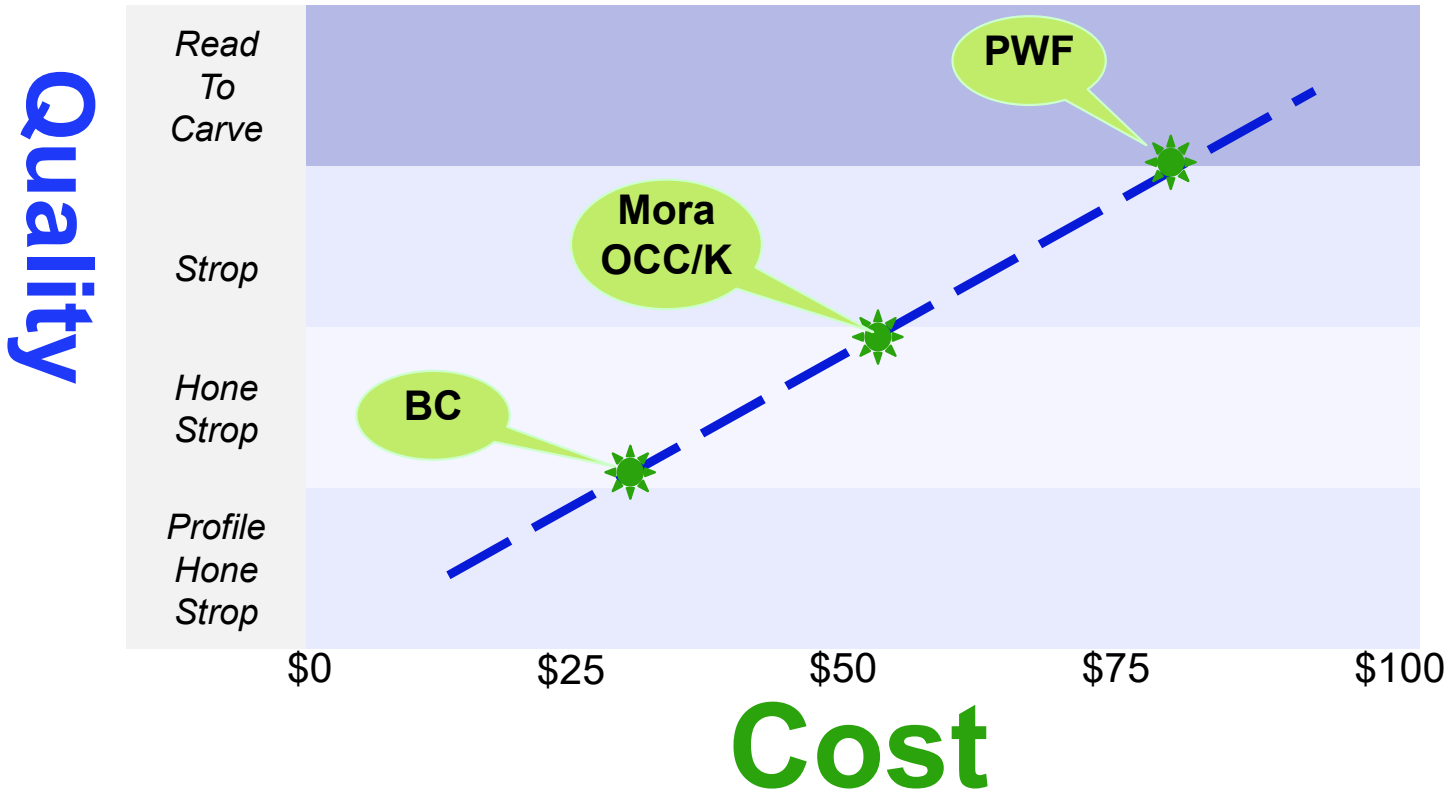
Key Points

- Most major brands will work - but amount of effort to get there varies by price point and quality of finish

- If you are not ready/capable of properly sharpening the tool, then higher price point is recommended – so you only have to strop to get started!
  - Proper stropping can get you a long way with a quality knife
  - You eventually need to be capable of properly hand sharpening
  - Power sharpening will not solve your problem!

- Diagnose your issues – is it the tool, material choice, carving technique, or sharpening technique?

Quality Versus Cost*



BC = Beavercraft
Mora = Mora Tools
OCC/K = OCC / Kryshak
PWF = Pinewood Forge / Refsal

Cost* = Price + Effort

Carving Knife Basics

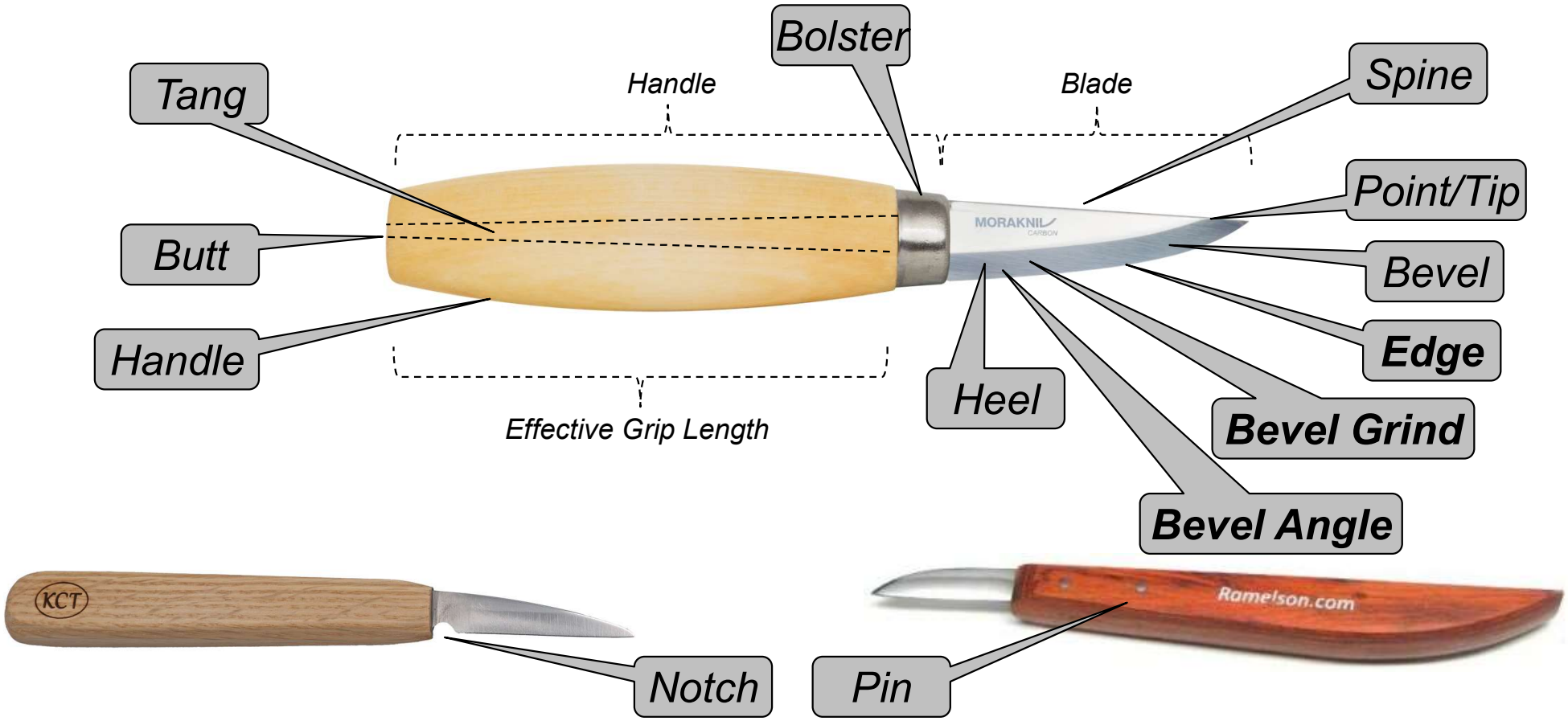
- Carving Knife Anatomy
- Carving Knife Elements
  - Blade Composition
  - Blade Profiles
  - Handle Profiles
  - Knife Construction
- A Basic Carving Knife Set
  - Start with a Coarse or Medium Carving Knife
  - Then add: Coarse (2” - 3-1/2”), Medium (1-1/4” - 2”), Fine (3/4” - 1-1/4”)
  - Flat-plane (1-1/2”-2”)
  - Chip Carving
- Supplies for Maintaining Your Carving Knife
  - Sheath
  - Strop and stropping compound
  - Honing stone set (medium, fine) and/or
  - Sharpening stone set (coarse, medium, fine)

Carving Knife Anatomy – What's Important

- Blade Construction
  - Carbon Steel
- Bevel Profile Alternatives
  - Bevel Angles - 25°, 15°, 12.5°
  - Bevel Grind – Scandi, Flat-Plane, Convex
- Blade Profile Alternatives
  - Straight
  - Angular
  - Convex
  - Concave
  - Spear-point, relieved spine, etc.
- Handle Alternatives
  - Handle Profiles
  - Blade/Handle Attachment
- Fit and Finish
  - Safety
  - Comfort

Carving Knife Elements

- **Knife Parts**: blade, point, edge, spine, notch, tang, handle, heel, butt
- Optional depending on construction: bolster, guard, pins

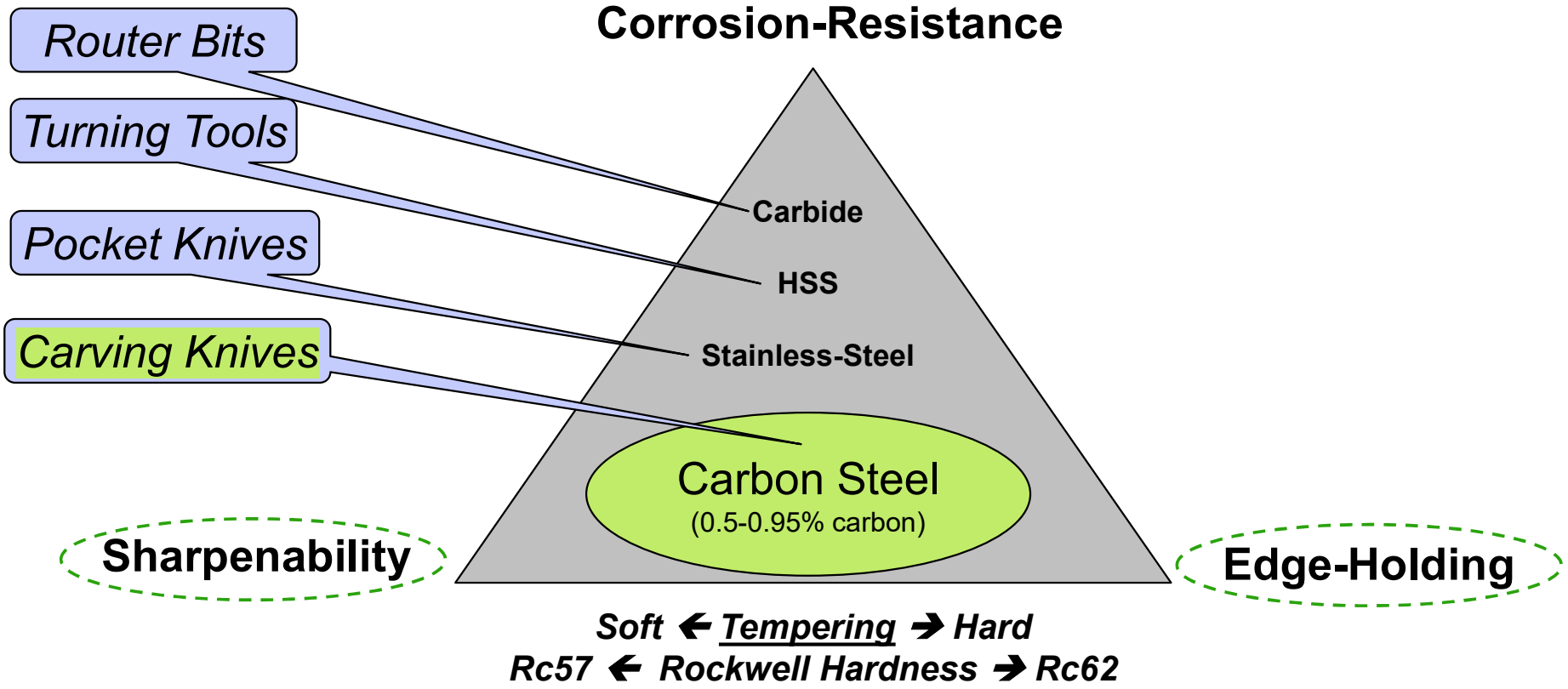


Blade Composition

- **Blade Metal Composition**
  - Carbon Steel is basis for all quality carving knives
  - Additives for edge-retention, sharpen-ability, rust prevention, strength: carbon, chromium, magnesium, titanium, vanadium, etc.
- **Carbon Steel** (low, medium, high) - AISI classification
  - Low-carbon steel. Low-carbon steel has 0.05 to 0.15% carbon (plain carbon steel) content.
  - Medium-carbon steel. Medium-carbon steel has approximately 0.3–0.5% carbon content.
  - **High-carbon steel**. High-carbon steel has approximately 0.6 to 1.0% carbon content.
  - Ultra-high-carbon steel.
- **Common Tool Steel for Knives:**
  - Old School - W-1 steel (water-hardened) - spring steel
  - Industry Standard - **Traditional: O-1 steel (oil-hardened) - drill rod, bar stock**
  - Newer technology: 1095 steel, A2 steel, high-speed - more for turning tools
  - Laminated steel
    - Laminated - carbon steel center plus softer iron outer layers - historic edge tools
    - Damascus - Japanese layering/folding
- **Blade Hardness** - Rc 59-61 typical, 57 (Opinel) to 62+ (Japanese)

Blade Tool Steel Composition Trade Offs

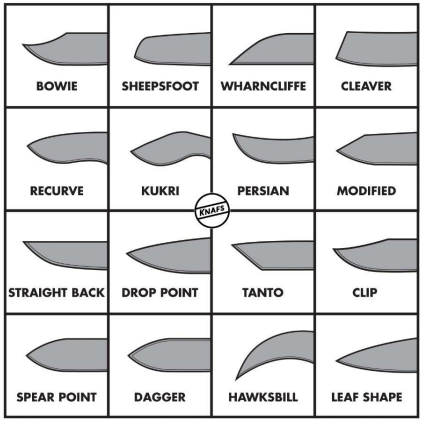
- Ron Hock*: "*The three qualities that most effect the selection of a steel for a hand-tool application are **edge-holding, sharpenability, and corrosion-resistance.** For metallurgical reasons, you can only have two of the three*."
- *A steel's carbon content determines its ability to harden with heat treatment. That hardness (via tempering) determines a tool's ability to hold a sharp cutting edge under abrasive pressure (wear).*

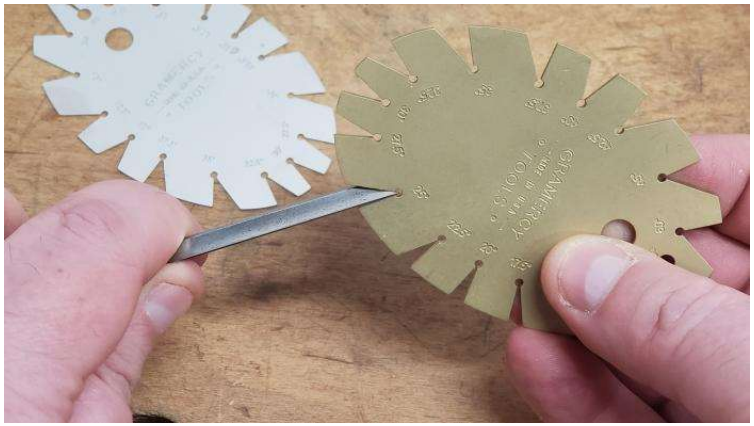


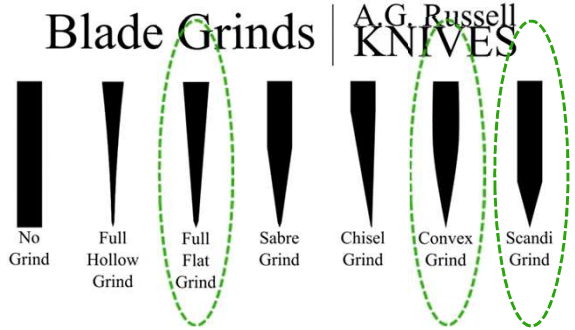
*Ron Hock: Author of "The Perfect Edge, the Ultimate Guide to Sharpening for Woodworkers

Carving Knife - Blade Profiles

- **Edge**
  - Straight
  - Angled
  - Convex
  - Concave
- **Bevel Angle**
  - 25 degrees (Roughing – Coarse)
  - 15 degrees (General – Medium)
  - 12.5 degrees (Flat-Plane – Fine)
  - 10-5 degrees (Chip Carving)
- **Bevel Grind**
  - Scandi
  - Convex
  - Flat-Plane
  - Pseudo-Flat-Plane



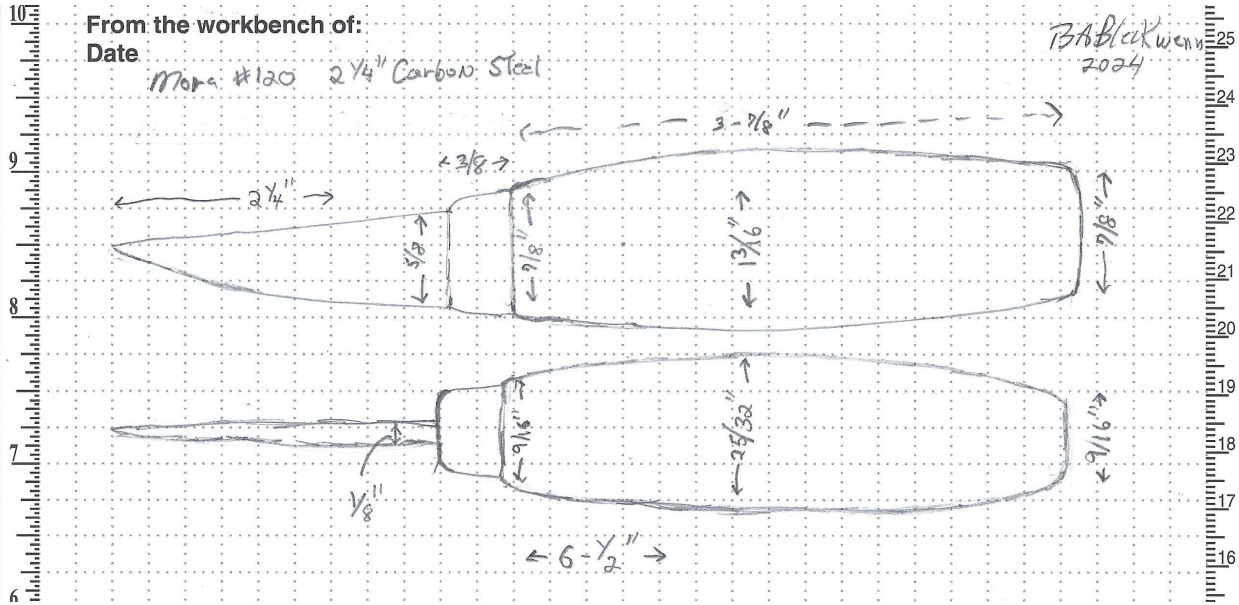




Carving Knife - Handle Profiles

- **Handle Dimensions**
  - Length (4-1/2” – 6”)
  - Width (1/2” – 1-1/4”)
  - Thickness (1/2” – 1”)

- **Profile Shape Variations**
  - Round – Oval – Octagon – Rectangular/Rounded
  - Straight, Tapered, Double-Tapered, Torpedo, Pencil
  - Straight, Curved, Grip-Shaped
- **Wood Species**
  - Hardwood
  - Laminated
- **Finish**
  - Bare Wood
  - Paint
  - Varnish
  - Oil
  - Wax



Carving Knife - Construction

- **Blade and Handle Construction**
  - Excavated
  - Drilled
  - Chiseled, filed, sawed
  - Riveted
  - Split handle with glued/epoxied and/or riveted handle
- **Tang Variations**
  - Square, Rectangular
  - Tapered
  - Notched
  - Rivet Holes
  - Through Handle
- **Handle/Blade Attachment**
  - Epoxied
  - Riveted
  - Burned in
  - Wedged in
  - Combination
- **Handle Surface Treatment**
  - Plain/sanded/paint/varnish/wax
  - Carved
  - Textured

Carving Knife - Options

- Knife Brands
- Knife Sources
- Knife Styles & Sizes
- Knife Prices and True Costs

Major Knife Brands

- Beavercraft – Ukrainian*
- Butz - Rick Butz two-knife combination*
- Deep Holler Knives (DHK)
- Deep Woods Ventures
- Drake
- Dunkle
- Flexcut - American spring-steel carving tools*
- Garrett Wade - in house brand
- German - Lee Valley*
- Harley Refsal / Pinewood Forge - flat-plane and spoon knives*
- Helvie
- Hock*
- Japanese - Lee Valley
- Kirschen / Two Cherries – German*
- Knots Knives
- Lee Ferguson Knives - thin, pencil-style
- Lyons - walnut handles*
- **Mora** - traditional Sloyd and Bushcraft knives – Sweden*
- Murphy*
- Narex - Czech
- **OCC/Kryshak***
- Opinel (folding) – French*
- Pfeil - traditional European carving tools – Swiss*
- Ramelson*
- Schaaf - California
- Silverman Works - new, one-man craftsman
- Stanley (fixed and folding)*
- Stryi - Ukraine
- Warther
- Wood Carvers Supply - in house brand - MasterCarver (Swiss and German)*

**** I own their products***

Major Knife Sources

- **Amazon***
- Art From The Bark*
- Beavercraft*
- Belcher Carving*
- Cascade Carving*
- Chipping Away*
- Deep Holler Knives (DHK)
- Deep Woods Ventures
- Drake Knives
- Gregg Dorrance*
- Helvie Knives
- Hummel Carving*
- Knots Knives
- Lee Ferguson's Handcrafted Knives
- Lee Valley*
- My Chip Carving
- Pinewood Forge*
- Ragweed Forge (Mora knife blades)
- Silvern Works
- Stadtlander Carving
- Stryi Carving Tools
- Tools For Working Wood*
- Warren Cutlery*
- Warther Cutlery
- Wayne Barton's Alpine School of Wood Carving*
- Whittling Shack
- Wood Carvers Supply*
- Woodcarvers Warehouse
- **Woodcraft***
- **Woodworkers Club***

I've purchased from them

Knife Styles & Sizes

- **Coarse** – Roughout (2”-4”)
- **Medium** – Work-horse (1-1/4”-2”)
- **Fine** – Detailed (1/2”-1”)

- **Specialty**
  - Flat-Plane, Chip Carving, Kolrosing, Spoon Knife

Wayne Barton

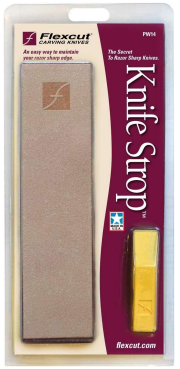
Helvie

Carving Knife Prices and True Costs

- **Price Ranges per Knife $13+S&H to $55+S&H**
  - Lower priced knifes require full commissioning (120 grit - 4000 grit + stropping)
  - Medium-prices knives require honing/stropping
  - Higher-end knives ready to use or just an initial stropping
  - Making your own will not save you money. Price difference between a blade-only and a handled knife is only $2-$9 difference! More sharpening also required!
- **True Costs** depend on you time and ability to fully commission, hone and/or strop a lower priced/quality knife or purchase a carve-ready knife - do you have the sharpening equipment and sharpening expertise as a beginning carver?
- First Carving Knife Sweet Spot ➔ $13-$30 + SHT
  - **Strop Only**
    - **OCC/Kyrshak** (1-1/2” - 1-7/8” blade, ~12.5-degree bevel) - $28.00 (Art From The Bark, etal.)
    - **Mora 120 Carbon** (2-1/4” blade, ~25-degree bevel) - $26.70 (Amazon)
  - **Hone + Strop**
    - Flexcut Roughing (1-3/4” blade, ~12.5-degree bevel) - $21.59 (Woodcraft)
    - Ramelson Beginner Roughing (1-1/4” blade, ~25-degree bevel) - $17.99 (Woodcraft)
    - Beavercraft C2 (1-1/2” blade, ~22.5-degree bevel) - $13.00 (Beavercraft)

Carving Knife Maintenance and Protection

- Sharpening and maintaining the edge
  - Coarse (120-400 grit) – Profiling – Commissioning
  - Medium (600-1200 grit) – Honing – Raise/Remove Bur
  - Fine (1200-8000 grit) – Polishing
  - Stropping – (16,000-30,000 grit)
- Protection the blade
  - Sheaths - leather, wood splints, cork, carved wood, plastic tubing
  - Rust prevention – clean blade after use, add oil to sheath
- Stropping Options (price of one knife)
  - **Stropping Kit** (strop, compound) - $17.77 - $27.98 (Amazon, SharpeningSupplies.com)
- Sharpening Option Prices (price of three knives)
  - **Wet/Dry Sci Sandpaper Assortment** (150-3000 grit) - $12.99 (Amazon)
  - **DMT Diamond Credit Card Set** - $23.60 (Amazon)
  - **Ceramic Set** (coarse/fine set) - $79.00 (Wayne Barton)
  - **DMT Bench Stone Set** – (4 grit, double-sided) - $89.99 (SharpeningSupplies.com)
  - **Oil Stone Set** (3”x8”, 4 grit set + Oil) - $99.99 (SharpeningSupplies.com)



Carving Knife Performance Check - Diagnosis

1. Assess for possible issues and address accordingly:
   A. Sharpness - how well does it cut/slice?
   B. Edge Holding Ability - re-stropping/re-honing frequency?
   C. Cutting/Slicing Technique?
   D. Ergonomics - Comfort?
   E. Knife Selection?
2. Test cutting and slicing performance, size of cuts, quality of result
3. Verify quality wood selection – hardness – use basswood as baseline
4. Identify Bevel Specs – Bevel Grind, Bevel Angle, Quality of Edge
5. Check angle of edge engagement
6. Based on severity of results - re-strop, or re-hone & strop, or re-profile, hone and strop
7. Verify proper sharpening stone grits and sharpening techniques
8. Re-assess your cutting techniques, depth of cuts
9. Change the comfort factors
10. Re-assess your knife selection – size, profile, bevel angle

Make Your Own Carving Knife

- Making your own carving knife
  - Blade sourcing and selection
  - Handle sourcing and selection
  - Construction Tools
  - Supplies - epoxy, rivets, finish
  - Embellishing your knife
  - Sharpening supplies for sharpening
- Try out various carving knives for feel, fit, comfort, performance