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Our *international* membership is happily involved with "Anything that goes 'cut'!"

December 2015

A Folding Trade Knife

Martin Drivdahl

When I think of a trade knife in the true historical sense, my mind conjures up visions of the Hudson Bay Fur Company and American Fur Company competing fiercely for trading territory in what is now the Canadian Provinces and the northern tier of many of the U. S. bordering Canada. In my area much of the trading merchandise came by paddle-wheeled steamships up the Missouri River to Fort Benton, Montana. Trade knives would have been part of this merchandise, as these knives were an essential item in the fur and hide business. When the buffalo were being slaughtered for their hides in the Montana territory and north of the border into Canada, I can visualize a great need for skinning knives. When buffalo carcasses were plentiful, the wolf population exploded; and around Fort Benton, a motley bunch of men called "Wolfers" were making a good living by killing wolves and selling their hides.



A man named John J. Healey established a trading post just north of the Canadian border near Fort McLeod. This trading post was Fort Whoopup, and the wagon road from Fort Benton to that post was called the Whoopup Trail. J. J. Healey was big in trading needed supplies to the natives in this area for buffalo robes. He may have done some of his business with whiskey as a trade item, but I'm sure good skinning knives were also much in demand by the natives.

Up until the advent of the railroad coming into Montana, many steamship loads of buffalo robes, wolf hides and other furs were transported down the Missouri River from Fort Benton. Joel F. Overholser in an article titled *The Big Muddy Builds Montana* wrote, "From 1860 to 1866 the steamers of the American Fur Company and their rivals raced up the river with supplies and brought back bales of buffalo robes and wolf skins, which had

largely replaced the earlier beaver as standards of value in the trade."

The supplies most certainly included much needed quality knives for skinning and fleshing the thousands of large thick skinned buffalo and wolves, as well as other hide and fur bearers. I visualize that these trade knives probably consisted largely of wooden handled, curve bladed, butcher knife



looking fixed blade skinning knives. However, in a book my grandkids sent to me entitled *Firearms, Traps, And Tools Of Mountain Men* by Carl P. Russell, I came across an interesting chapter by the author entitled Clasp Knives. In the combined index and glossary of *Bernard Levines Guide To Knives*, a clasp knife is defined as follows: "A large single-bladed jack knife with an upward curving handle that tapers to a point, traditionally made from the solid end of an animal's horn."

In his article Carl Russell goes on to state that this form of folding knife was actually one type of trade knife sold in America as early as the mid 1700s. He terms them French Clasp Knife although they've often been referred to as "Spanish." Apparently some of the early 19th Century American traders took a liking to them. Mr. Russell writes that on February 28, 1832, Nathaniel Wyeth addressed the New York jobbers, Davenport and Bryon, "What I now want is three dozen Spanish knives of best quality for personal arms, 5-1/2" blade with a set to prevent its shutting when closed." Although not especially Spanish, this type of clasp knife is apparently still in use in France, Italy, Sicily, Greece, Tunisia, Algeria, Morocco and elsewhere in Europe and Africa. The author acquired one from a vendor in French Morocco in 1923 that was tang stamped VERITABLE DUMAS & CIE (see fig. 42a). The blade shown in figure 42b was recovered from a site at Fort St. Joseph at Niles, Michigan. It has a French marking and was believed to have been used about 1700-1760. Figure 42c shows a blade recovered at Kansas Monument Site, Republic County, Kansas. It is marked B/F and is probably no earlier than 1777. Figure 42d shows another blade from

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Prussian Knives Defined...Maybe

Raymond Ellingsen

Have you ever had a child (or been the child) that plays the “Why?” game? Let me give you an example: CHILD: Why is the earth round? ADULT: (with pride) Because of a process called hydrostatic equilibrium, which causes objects of large mass to attract other masses to create a more efficient shape, namely a sphere. CHILD: But why? ADULT: (patiently) Because that’s how gravity works. CHILD: But why? ADULT: (suddenly realizing the trap) Uh...because gravity is a force that affects everything around us? CHILD: But why? ADULT: (angry now) Because if you don’t stop asking me stupid questions; I’m going to punch you in the head.....CHILD: But w...

You get the idea. Recently, I had the opportunity to be that child with Bernard Levine, arguably one of the more knowledgeable authorities on historical “things that go cut.” And, while the subject wasn’t planetary masses and their effects on the universe, it was a subject that I am genuinely curious about, Prussian style butcher trade knives. Bernard was kind enough to sit down with me and patiently answer numerous questions relating to that topic.



And, spoiler alert: By the end of the conversation Bernard had not lost patience with me and hit me upside the head (although he probably had just cause). He did, however, shed a lot of light on the subject at hand.

For those of you not familiar with this particular style of knife, they are loosely referred to as Prussian knives, primarily due to the company, Heller Bros., who produced a large number of them around



the turn of the Twentieth Century. There were many others of similar style produced by other companies or, more correctly, stamped with other names, made around this time; but the GESETZLICH[GESCHUTZT] PRUSSIA stamped versions with the pewter-like crown on the handles are more common, hence the association.

On a side note, I currently have approximately 200 examples of these knives. They come in different blade lengths, have varied bolsters, different handle materials and slightly varied shapes. I have identified 39 various stamps, including Dixon Cutlery, Henry Sears, La Croix, Robt. Klaas and other lesser known markings.

When I started researching these knives, my first order of business was to define exactly what purpose a Prussian butcher trade knife served. The term

“trade” knife was affixed to this item largely due to the fact that they were inexpensively manufactured, sold in bulk, usually by the dozen and marketed to the unsophisticated masses for trade purposes.

I understood the “trade” part. Like beads, firewater and other similar items, they have the attraction of being shiny and new and certainly look more valuable than they actually are (were). So the trade distinction

was easy for me to accept.

The butcher knife association made me curious, so I cleaned one up and put it to work in my kitchen, chopping up vegetables, cutting chicken and other meats and assigning it general slicing chores. After several days of this, and several sharpening sessions, I deduced that, as a butcher knife, Prussian knives...well, suck.

The blade geometry leaves much to be desired, the point is either too far forward or too far backwards, depending on the task you are attempting to perform; it is too thick for fine cutting; and too thin and light for chopping. In other words, it’s pretty useless in the kitchen. And, even though the blades are mostly high carbon steel, their edge holding capabilities are only adequate (thanks, Wayne Goddard, for raising the bar so high with your blades that everything else seems wanting).

I have heard these knives referred to as “German hunting knives” as well. I do not hunt regularly, but I do camp and spent a fair amount of time in the wilderness. To my thinking, this means a hunting knife must be field expedient and able to perform a number of tasks under rough circumstances. With that in mind, I took a Prussian knife into the field and set up camp with it. As a fuzz stick maker, fire prepper and general camp chore tool, it performed surprisingly well. The handle was comfortable to hold; and

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December Mini Show

The Show is over, and next month we will have a report on this December Winter/Mini Show event. It was a fabulous Show, and the vote as it will happen again next year.

Jenny Wren

The poem or rhyme on the last page goes back as early as the 1700s. So what does this verse have to do with a knife? Not much really, but it helped to solve the mystery of why the name Jenny Wren appeared on a pocketknife. After all, "Who Killed Cock Robin?"



Gene Martin Display award knife

Display Award Knives

The theme of the award knives for the April Display Award is "Trade Knives." Knifemakers have taken the blanks of 1095 steel and will enhance them with their interpretation of the theme. This year's theme is not as defined as in years past; so to help these makers and inspire them, we have included a few articles that deal with what we now can call Prussian trade knives. Also a reminder for the makers to get started on their knife is **Gene Martin's** knife which we received at the Mini Show. This knife is pictured here and is posted on our web page.

Micarta Competition

The article in the *November Knewsletter* about Micarta could be of special interest to knifemakers. The Micarta blocks I have collected will be given to anyone who will make a knife using this Micarta. At the April Show these knives will be judged based only on the work of the handle itself. An award will be issued. Only these blocks can be used. A commitment to use the Micarta for this competition is all that is required. And besides that you will get the notoriety that you have a knife and might be able to sell it at the April Show. That is, after it has been judged.

Those thus far who have a chunk of the Micarta are **Zac Buchanan, Cliff Christen, Blair Goodman, Walter**

Hardcastle, Steve Huey, Mike Johnston, Jim Jordan, David Kurt, Eric Land, Gene Martin, Lynn Moore, Craig Morgan, Dave Rider and Bryan Wages. Be careful... Be wise...

Be creative... Be safe... Use protective devices and cover the mouth and nose and eyes. But you should know that if you are a maker of knives.

Articles herein....

I want to thank **Martin Drivdahl, Raymond Ellingsen and Gene Martin** for their words in this issue. More words are needed, and I know that they are out there. Please share your knowledge, as this *Knewsletter* is a perfect medium for contributions from our membership.

It is what makes our organization unique.

OKCA Facebook Group

Lisa Wages

has taken the lead on our Facebook page. She writes: The OKCA now has its own Facebook Group! You'll be able to socialize with other members on FB, stay up-to-date on OKCA events, share show-and-tell photos from your collection, or post a blade for sale. This closed group will begin accepting members following our November meeting. We hope you'll join our new FB community and help us build a positive online network of area knife enthusiasts.



Another reminder...

The year ends and your 2015 membership ends too. Get your membership (and tables too) caught up soon. Membership has its advantages of this *Knewsletter*, entry to the April Show and a tremendous help in supporting our "anything that goes cut" community. Get your dues in soon.

The Sizzler...

Don't forget our monthly meeting at the Sizzler Restaurant. It is the third Wednesday of the month which makes it December 16, 2015. I always look forward to this gathering, so mark your calendar and come be with us. Come smile with us with your latest purchase. It is always nice to see my fellow knife enthusiasts.

It ain't too early to...

Make lodging reservations for the April Show. The Valley River Inn - (541)687-0123 - which is our partner in lodging for the Show, had a complete remodel; and, from the reports heard, it is one awesome place to stay. Get your reservations in early. The rooms fill up fast. Mention the Show when you register, as we are offered a special rate for the Oregon Knife Collectors. You might also note the Courtesy Inn - (541)345-3391 - the closest motel to the Knife Show. A Budget motel that has worked well with us over the years. 🐾

The Seek-Re-Tary Report

elayne

The November meeting was November 18, 2015 at the Sizzler Restaurant, Eugene/Springfield OR. We had 24 present. We are starting to receive renewals for membership for the 2016 year as well as table renewals for the April 2016 Show. We are hopeful that we will start to generate more interest in the December Show. Plan to have 85 tables.

We have not decided on the 2016 OKCA knife. As soon as information (description and price) is available, it will be announced. **Roy Humenick** has volunteered to coordinate this.

Dennis Ellingsen has a supplier of used Micarta and has proposed a competition. Individuals will receive a piece of Micarta and handle a blade. The handle will be judged (not the blade or knife) at the April 2016 Show. An award will be presented. See *OKCA Knews and Musings* in this *Knewslettter* for a list of the individuals who have volunteered for this project.

Lisa Wages has volunteered to establish a Facebook page for the OKCA. It will be open to members of our organization. An individual will be able to post

photographs of their wares in their adverts as well as interact with members of the knife community. We will have a link on our website (not as of this printing). Further information about our page will be available as it becomes better established.

The December Show was yesterday, and I believe it was successful. The weather was rainy but not cold and no snow or ice. The Wheeler Pavilion was warm, and the OKCA provided hot coffee and donuts to those who attended. I do believe it added an air of comradery which makes for a better happening.

The tables for Toys-4-Tots were full of fun toys for boys and girls. Thank you **Bryan Christensen** for your coordination of this event. This is an event in which the OKCA has been involved for many years thanks to the efforts of **Michael Kyle**,

I am now attempting to update the database with the renewals of membership and tables before we mail this *Knewslettter* for December. We had 57 membership renewals (22 single and 35 family) and were paid for 23 tables for the 2016 Show. The new 2016 membership cards were available for pick up at the December Show. If you were unable to attend, we will mail your card at the time at which we mail the table confirmations for the 2016 Show.

The January *Knewslettter* will be the last mailing to anyone who has not renewed their membership for 2016. Please check your label – 2015 renew now. Only 2016 members will be able to enter on Friday, April 8, at 10:00 am with the table-holders. If our records are not correct, please contact me to make the necessary changes- (541)484-5564 or snail mail P O BOX 2091 Eugene OR 97402 or email info@oregonknifeclub.org.



The deadline for reservation of your 2015 table for April 2016 is December 15. After that date the tables will be assigned to the members who are listed on the waiting list. Application on the web site or past *Knewslettters*.

If you are shipping items to the OKCA, please use our special postal address of OKCA-3003 W 11- PMB 172- EUGENE OR 97402. The mailing address for correspondence, memberships, table payments and articles is OKCA - P O Box 2091 - EUGENE OR 97402. You may always contact us via email or phone. We do return telephone calls if a message is left.

See you at the meeting, December 16, at the Sizzler Restaurant, Gateway Blvd, Eugene/Springfield OR. ↘

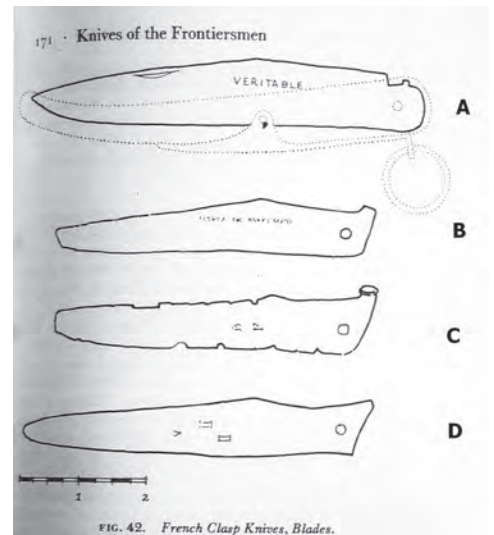
A Folding Trade Knife continued from page 1

the Fort St. Joseph Site and is similar to the knife blade shown in 42b. All of these would have originally had a one-piece horn handle and an external steel spring with a hole or slot that engaged with the protruding knob on the blade to lock the blade open (shown by the dotted lines fig. 42a).

I acquired one such knife several years ago that fits the description of this type of folder to a tee. The knife is very large with a horn handle 8-3/4" long top to tip and a blade that projects 7" beyond the end of the handle. An extremely strong external spring, with a small hole just behind the release pull, engages with a protrusion on

the rounded part of the blade tang with a loud "click" when fully opened. The spring is so strong that it's almost dangerous to release the blade lock, which is done by pulling on the leather thong. The blade is extremely sharp, and one slip could result in serious blood shed! The overall craftsmanship is excellent, and the blade is marked with a very finely detailed figure of a human torso with a bow and arrow attached to the figure of a horse. This is followed by the name *E. MONTAGNAC*. This marking is not in any of my books, but I'm guessing the knife is of French or southern European origin and could have been made by a small cottage cutlery shop. I have no idea of the knife's age, but it's certainly an authentic example of a folding knife type that was among the early trade

knives sold and used on the American frontier. ↘





OREGON KNIFE COLLECTORS ASSOCIATION

P.O. BOX 2091 • EUGENE, OR 97402

MEMBERSHIP APPLICATION AND SHOW TABLE CONTRACT

PLEASE RETURN THIS ENTIRE PAGE or a photocopy. DO NOT CUT IT UP!

email: okca@oregonknifeclub.org

Name(s) _____

Mailing Address _____

City _____ State _____ Zip _____

Phone: Eve (_____) _____ Day (_____) _____ Date _____

Collector Knifemaker Dealer Mfr./Distrib. Other _____ Email _____

OKCA membership includes knewsletter, dinner/swap meetings, free admission to OKCA shows.

____ Start/ ____ Renew my/our OKCA membership (\$20 individual/\$25 family) \$ _____

41ST ANNUAL OREGON KNIFE SHOW • APRIL 9-10, 2016 360 — 8'x30" TABLES

Exhibit Hall, Lane Events Center and Fairgrounds, 796 West 13th Ave., Eugene, Oregon.

For Information Contact Show Chairman: Dennis Ellingsen, (541) 484-5564

AUTOMATIC RESERVATIONS: If you had a table at the 2015 Show, you have an automatic reservation for the same table in 2016, but THIS RESERVATION EXPIRES DECEMBER 15, 2015. You may still apply for a table after this date, but we cannot guarantee a table after December 15. NO RESERVATIONS HONORED OR APPLICATIONS ACCEPTED WITHOUT FULL PAYMENT! Note to NEW exhibitors: your table(s) will be assigned after 12/15/2015.

ALL TABLE-HOLDERS AND VISITORS agree to abide by the OKCA Show rules and to hold the OKCA, its officers, and the Lane Events Center harmless for any accident, loss, damage, theft, or injury.

ANY QUESTION OR DISPUTE arising during the Show shall be resolved by the Show Chairman, whose decision shall be final.

THIS IS A KNIFE SHOW. All tables must be 90% knives or knife related items (e.g. swords, axes, edged tools, edged weapons, knife books, knifemaking supplies). If in doubt, check with the Show Chairman ahead of time. The OKCA reserves the right to bar any item from display or sale. No firearms made after 1898 may be sold or shown at this Show.

ALL EXHIBITORS are required to keep their tables set up throughout the public hours of the Show: 8 AM Saturday to 3 PM Sunday. ANY EXHIBITOR WHO LEAVES OR COVERS THEIR TABLE BEFORE 3 PM SUNDAY FORFEITS FUTURE RESERVATIONS AND WILL BE DENIED TABLES AT FUTURE OREGON KNIFE SHOWS.

DISPLAY TABLES will be around the perimeter of the room. Displays are eligible for display awards, which are hand-made knives donated by members and supporters of OKCA. Display judging will be by rules established by OKCA. Special category awards may also be offered. **NOTHING MAY BE SOLD FROM DISPLAY TABLES.**

SALE/TRADE TABLES Sharing of tables will not be allowed. Exhibitors must comply with all applicable local, state, and federal laws. Oregon has NO SALES TAX.

BADGES: Each table-holder is entitled to one additional Show badge. **NO EXCEPTIONS.**

KNIFEMAKERS who are present and are table-holders at this Show may enter knives in the knifemaking award competition.

FOR MORE INFORMATION on categories and judging criteria in the display and hand-made knife competitions, contact the Show Chairman.

SHOW FACILITATORS will be provided by OKCA from 10AM Friday until 4 PM Sunday. However, exhibitors are responsible for watching their own tables. Neither the OKCA nor the Lane Events Center will be responsible for any loss, theft, damage, or injury of any kind.

CITY AND COUNTY REGULATIONS require that there be:

- No Smoking within the Exhibit Hall at any time;
- No alcoholic beverages consumed within the Exhibit Hall during the public hours of the Show;
- No loaded firearms worn or displayed at the Show;
- No swords or knives brandished or displayed in a provocative manner.

Violators of these safety rules will be asked to leave.

NOTE ON SWITCHBLADES AND DAGGERS: In Oregon it is legal to make, sell, buy, or own switchblade knives. However, it is **ILLEGAL** to carry a switchblade knife, a gravity knife, a dagger, or a dirk concealed on one's person, or for a convicted felon to possess a switchblade or gravity knife. Most other states have banned switchblade knives. Under federal law, it is **ILLEGAL** to mail, carry, or ship a switchblade or gravity knife across state lines.

The Oregon Knife Collectors Association is not responsible for force majeure.

EXHIBITOR CONTRACT: PLEASE ENCLOSE FULL PAYMENT WITH THIS FORM. Full refund granted if reservation canceled by February 15, 2016. **DON'T GET LEFT OUT!!!**
MAIL THIS PAGE AND YOUR CHECK TODAY. A signature is required.

Type of knives on your tables _____

Name for second badge _____ (two badges per table-holder)

Qty _____ Club Dues (Total from above)\$ _____

Qty _____ Sale/Trade table(s) @ \$120 each (members only).....\$ _____

Qty _____ Collector Display table(s) **free with sale table:**.....# _____

Qty _____ Collector Display table(s) w/o trade table @ \$100 each.....\$ _____

TOTAL ENCLOSED (make check payable to O.K.C.A.)\$ _____

I have read and agree to abide by the OKCA Show rules as set forth in this contract, and to hold the OKCA, its officers, and the Lane Events Center harmless for any accident, damage, loss, theft, or injury. **Signature and date required.**

Signature _____ Date _____

SHOW SCHEDULE

Friday, April 08, 2016.

10am - 7pm set-up; open ONLY to table-holders and members of OKCA.

Saturday, April 09, 2016.

7am-8am set-up. 8am-5pm open to public.

Sunday, April 10, 2016.

8am-9am set-up. 9am-3pm open to public.

Tables that are cancelled will revert back to the OKCA. Subcontracting tables is not permitted.

*** PLEASE RETURN THIS ENTIRE PAGE or a photocopy. DO NOT CUT IT UP!***

www.oregonknifeclub.org

Who killed Cock Robin?

ibdennis

The poem or rhyme in this *Knewsletter* about Cock Robin dates to the mid 1700s. This poem and the creative genius of Walt Disney are what led me to determine what might be the story of a knife that we have. Well, actually three knives, which are all identical. The first was found better than 20 years ago. It was tang marked SHAPLEIGH HDWE. CO - ST LOUIS, MO. and the mark on both sides of the white celluloid handles was "JENNY WREN." This is a two blade knife with bird's-eye rivets. The main blade is a spear with a long pull and a small pen blade on the other end. The only discernable difference is the half stops on two of the knives. The style of the knife dates them to a vintage of the 1930s. I have also seen another Jenny Wren knife with the tang mark of Utica Cutlery Co.

Back when I received the first knife, my research produced nothing to identify the name of Jenny Wren. Ten years later, with the purchase of the second knife, I was still perplexed. The third knife started me on the search once again; and, by cracky, I think I have figured it out. Although I will continue to verify my story, this accounting will have to do for now.



In 1929 Walt Disney did a series of animated short films called the *SILLY SYMPHONIES*. He did 75 of these animated shorts which were the forerunners to his full featured animations. There were 75 *Silly Symphony* animations produced between 1929-1939 and *Who Killed Cock Robin* was number 54 released in July 1935. This Walt Disney film can be seen on

U-Tube. The film starts out with Cock Robin on a branch serenading Jenny Wren on her balcony on a higher branch. There is no mistaking Jenny Wren, who is the personification of Mae West. The cast of characters in this animation include caricatures of Mae West (Jenny Wren), Bing Crosby (Cock Robin), Harpo Marx (the cuckoo) and Stepin Fetchit (the blackbird). An arrow from out of no where is shot into Cock Robin hitting him in the heart. In actuality Cock Robin was knocked unconscious when he fell on his head. As the crazy bird population tries to figure out in song and dance who the killer was, it is revealed that Cupid was the culprit with an arrow in the heart. Awe, the first sign of love. In the end Jenny Wren approaches the body of Cock Robin, the arrow pops out and Jenny embraces Cock Robin who has awoken and come alive.



The impact of this film leads me to believe that advertisers of the day felt a



marketing device of a pocketknife with the name Jenny Wren might be a good seller. With three of these knives in my possession, it suggests that a bunch were made. I can see them being sold at movie theaters, mail order and hardware outlets. The window would be short, guessing 1935 to 1940. Jenny Wren would also be a memory for those who would idolize Mae West. Well this is my best guess, so any first hand knowledge on these knives would be welcome.



http://disney.wikia.com/wiki/Silly_Symphonies

KNIFEMAKING 101 - Heat Treating, Part 3

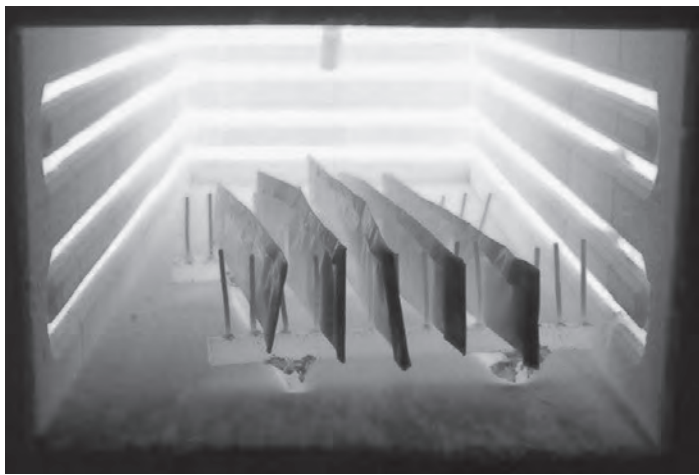
Gene Martin

This *Knewsletter* let's talk about air hardening steels. When we speak about quenching steel in air, it sounds like an oxymoron. After all, how is a blade cooled quickly in air? The simple answer is that it isn't. It really comes down to the definition of quickly.

Last *Knewsletter* we got kind of technical. There is a reason for that, but the practicality will be explained in Part 4. For now, no real technical stuff, or not much, I promise.

We talked earlier about cooling our blades quickly. There are metallurgical charts that show a curve on how much, or little, time is allowed to reduce the temperature of the blade from above critical to below the temperature where all the magic takes place. On 1095, our favorite simple steel, it's about one second. The violence of that transformation can be felt through our tongs as the blade quenches, especially in water.

As more elements are added to the steel recipe, the critical temperature rises. In the case of air hardening steels, the amount of time allowed to quench the blade also rises.



Inside of the furnace of 1975 degrees F.

The more commonly used air hardening steels are A2, D2 and ATS34/154CM. Others include S30V, S35VN, 440A, B, C, V and the list really goes on. For the sake of simplicity, we will discuss



Foil wrapping the blade

A2, D2 and ATS34/154CM.

While the simple 10xx steels are iron, carbon and manganese, the air hardening steels get pretty complex. The steels we are discussing are all high carbon, running around 1%, except D2 which is 1.5%. They also share manganese, chromium (chrome), silicon, molybdenum (moly) and vanadium, except for ATS34/154CM. I use ATS34/154CM because ATS34 is the Japanese version of 154CM. Now you know what chrome moly steel is, just a steel where those two elements are added.

The bottom line of all these extras that enhance performance, stain resistance and cutting ability all raise the critical temperature and quench time. Some air hardening steels allow over a minute to bring the temperature down, generally below 900°F. You would be surprised, too, at just how fast blades cool in air.

Some of these steels can be oil quenched, quenched in molten salt or be plate quenched. We've discussed oil quenching. Using molten salts is called marquenching or austempering and involves using different kinds of molten salts to bring the blade up to temperature and then quenching in another type of molten salt. I don't use these methods, so I'm really not qualified to speak

beyond the basics. A really dry place to work is required, and I don't have one dry enough. A drop of liquid in the salt bath can, and often does, create a violent explosion. My shop sometimes looks like there was an explosion. I don't need a real one.

Plate quenching consists of placing the blade between two plates, generally aluminum, and clamping it in place. The aluminum acts as a heat sink and just sucks the heat from the blade. It also helps keep thin blades from warping. It's a faster quench than air. I use it mostly on bird and trout blades and fillet blades.

Air hardening steels are really finicky about temperature controls. With a simple 10xx steel, we can throw it in a forge, quickly bring it up above nonmagnetic and quench it. A D2 blade, on the other hand, has to be held between 1825° and 1875°, at a set temperature, not wandering around, for 30-45 minutes. The higher the temperature the higher the finished hardness.

This time at temperature creates one problem and amplifies another. The first problem is control. Anyone who hardens an air hardening blade in a forge or other uncontrolled heat source is making an inferior blade. Sure, it will get hard, but how hard and how well? Does it have soft spots? Probably. Remember that PhD's worked these things up. They get paid big bucks to work out the best performance. They do a lot of testing. We need to pay attention to what they tell us.

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The second problem, one that is intensified, is something called scale. Scale forms when oxygen contacts the hot blade. Over time, it reacts with the carbon in the blade and forms carbon dioxide. Simply put, it burns out the carbon and leaves an iron residue.

To prevent scale we use tool wrap, a stainless and titanium foil, rather like a really stiff aluminum foil, to encapsulate the blade. Some paper is added inside to remove the free oxygen from the pouch, and no scale. There are other things to protect against scale, like ATP641. It's a ceramic suspended in water. It works well on oil hardening steels, but I prefer tool wrap for air hardening steels. Tool wrap can deliver a really wicked "paper cut."

Tool wrap isn't used for oil quenched deep hardening steels. It takes too long to get it out of the pouch. I use two pairs of pliers to rip it open and remove the blade. Some use scissors or shears to cut the end off, which makes sense. Right up to the point where you clip the point right off a hot blade. Then it maybe wasn't such a good idea. After that it's two pairs of pliers. Of course, I wouldn't know

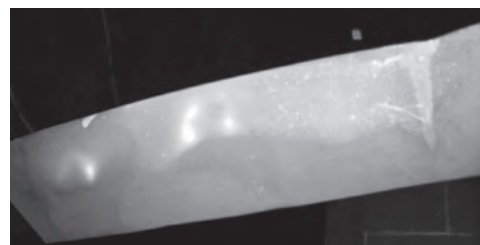
about clipping off a tip.....but I do use pliers now.

Once the blades are quenched and very cool, we get to the part about cryogenic or subzero quenching. In short, cryo treatment means continuing the quench to 95°F to 105°F below zero. Sorry, the freezer or snow bank doesn't cut it for this. The low temperature is based on the steel type.

The two basic ways to realize the subzero quench involve either dry ice or liquid nitrogen. I use both, depending on the steel and how many blades I have to do at a time. If it's more than 25, I use the liquid nitrogen. For fewer blades I use dry ice, which evaporates at -109°F. I've devised a method that will hold dry ice for five days, so the temperature is good. Liquid nitrogen evaporates at -305°F.

What the cryo quench does is force any retained austenite in the blade to convert to martensite, the good stuff. Not all steels benefit from a cryo quench; air hardening and some deep hardening steels do. A cryo cycle also increases blade hardness and toughness.

I had a client who hunted above the Arctic Circle and had a problem with his knives breaking in the cold. He wanted a forged knife that would take the cold.



This is a blade glowing through the foil.

I forged a knife from 5160 and cryo treated it. I reasoned that if it would take the -305°F, it would have no problems with -50°F to -60°F. It was ready for delivery when the 9/11 attacks occurred. He didn't make it, so I never found out how well it performed.

After the cryo treatment the blades are tempered twice, for two hours each time. Some of the steels need a flash temper prior to cryo for stress relief. Any of the air hardening steels need that double temper cycle.

Once all this is done, it's time to make a knife. That follows along like any other blade of whatever kind of steel. Following the manufacturer's directions really will provide a great blade.

In Part 4 we're going to discuss clay treated blades, and the difference between a clay treated blade and a differentially hardened blade. Stay tuned. We're going to talk about 1000 year-old magic. 🗡️

Prussian Knives Defined...Maybe
continued from page 2

with a thumb on the spine, it was easy enough to bear down on something to cut it. If the tip had more of a drop point configuration, it would have been more useful; but overall I was pretty satisfied



with its performance.

I cannot attest to how efficiently it would serve to skin game, but one of my examples has a tag attached to it claiming that it "dressed a baby moose." The tag is dated 1923. So, there's that.

After spending numerous hours researching old catalogs and articles, speaking with knife historians and enthusiasts, testing and examining these knives, I feel I am no closer to defining them than when I started. Although there are several catalogs, clues and other evidence regarding Prussian style knives, their exact purpose and function seems lost to time.

As to their value, or what they're

worth, if you believe some of the more questionable sellers on Ebay, they would have you believe that "rare" Prussian knives are worth upwards of \$150 +++. I disagree (nothing new there). I paid \$90.00 for one with a completely full blade (that

is fairly unusual) and seemingly unused. I still feel the pain of that purchase, but I'm happy to have the example. I have also paid \$5.00 for quite a few of them. Most of the examples I have seen have (overly) sharpened blades and well-worn handles, which attests to the fact that they were probably used by their owners. For what, I have no idea.

The "cool" factor of these knives however, is off the charts; so I am inclined (regardless of Bernard's slightly disapproving head shake) to call them a trade knife and leave it at that. And, while they may not be worth a mint, they are worth owning one...or twenty.

For those of you who are interested in reading more about these knives, you can reference Bernard Levine's April 2007 Knife World Article, WhatIzzit? 🗡️





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Eugene 5160 Club: A Club for knifemakers of all stripes, meeting monthly. Check out our newsletter archive to get a feel for the group: elementalforge.com/5160Club. Sign up for newsletter & meeting reminders by finding us on Facebook at "5160 Club" and click the "Newsletter Signup" tab. Non Facebook users can still find us at: facebook.com/5160Club.

For sale - 2" x 72" belt sander with an 8" wheel and hollow grind attachment. It was made by Dan Westlind. It is set up for 110 volts. \$1200. Ray Simonson (360)601-1927 ray@wildboardblades.com

Wanted - 8"x5/8" grinding wheels.
Contact Robert Edmiston (541)726-2990.

For Sale - 1) Wilton #4130 square wheel belt grinder machine, belt 2"x72" 1hp single phase motor. Retail price \$2,500.00. Sell price \$1,595.00.. 2) Burr King Model #526 1"x42" three wheel belt grinder. 3/4hp motor. Retail \$1,785.00. Sell price \$1,185.00. Both grinders are used and came out of a private residence where they had hobby use only (according to the owner who is 86 years old). If interested call evening Kevin Bethel (541)570-1717 or send email kbethel77@gmail.com

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I am a jewelry designer and manufacturer in Salem OR, and I do custom work. I can set stones into steel, blades and handles of various materials. I have studied gemology and have a small collection of gemstones and Oregon rocks that can be cut to size and set. I also work in silver and gold and do just about any design. Meghan Donahue Jewelry Design - 189 Liberty St NE Unit B2a - Salem OR 97301 (503)967-5581 www.meghandonahue.com.

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SOG Knife Collector is a new book by Michael W. Silvey in the military knife series. It covers a narrow area of collecting and helps the collector identify honest specimens and distinguish them from fakes. The format is 8.5 inches by 11 inches and is all in color. The soft cover book is less than 50 pages but includes all the known variations of SOG knives. The information covered by this book will be valuable to both the new and advanced collector. The printing is limited to 2,000 copies. \$20 plus shipping. Mike at (530) 644-4590 or m.silvey@comcast.net.

WANTED : Western Wildlife Series knives produced from about 1978 to 1982 (letters B, C, D, E, F). I'm missing the knives with blade etches of eagle, elk, cougar, hunting dog, antelope and bear. Call Martin at (406)422-7490.

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The Knewsletter

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Who killed Cock Robin?

“Who killed Cock Robin?” “I,” said the Sparrow,
“With my bow and arrow, I killed Cock Robin.”

“Who saw him die?” “I,” said the Fly,
“With my little eye, I saw him die.”

“Who caught his blood?” “I,” said the Fish,
“With my little dish, I caught his blood.”

“Who’ll make the shroud?”
“I,” said the Beetle,
“With my thread and needle,
I’ll make the shroud.”

“Who’ll dig his grave?” “I,” said the Owl,
“With my pick and shovel, I’ll dig his grave.”

“Who’ll be the parson?” “I,” said the Rook,
“With my little book, I’ll be the parson.”

“Who’ll be the clerk?” “I,” said the Lark,
“If it’s not in the dark, I’ll be the clerk.”

“Who’ll carry the link?” “I,” said the Linnet,
“I’ll fetch it in a minute, I’ll carry the link.”

“Who’ll be chief mourner?” “I,” said the Dove,
“I mourn for my love, I’ll be chief mourner.”

“Who’ll carry the coffin?” “I,” said the Kite,
“If it’s not through the night, I’ll carry the coffin.”

“Who’ll bear the pall?” “We,” said the Wren,
“Both the cock and the hen, we’ll bear the pall.”

“Who’ll sing a psalm?”
“I,” said the Thrush,
“As she sat on a bush,
I’ll sing a psalm.”

“Who’ll toll the bell?”
“I,” said the bull,
“Because I can pull,
I’ll toll the bell.”

All the birds of the air fell
a-sighing and a-sobbing,
When they heard the bell
toll for poor Cock Robin. ↙

