



# The Edgehog

Issue 2 - 2013

[www.kgsa.co.za](http://www.kgsa.co.za)

June 2013



Loring Kimball style Bowie  
blade : 9.38" overall : 14.13"

Rob Brown

## Inside this issue....

- ◆ **Details on the Knife competition for non-Guild members**
- ◆ **Details on the upcoming Guild Knife Show**
- ◆ **And lots more ....**

# Knife-Making Competition For Non-Guild Members 2013

The **2013 Non-Guild Competition** will be administrated by **Gawie and Thinus Herbst**.  
Contact Thinus at: [thinus@herbst.co.za](mailto:thinus@herbst.co.za) or 082 254 8016 or phone 012 525 1295  
[www.herbst.co.za](http://www.herbst.co.za)

1. Competition is open to all non-guild members.
2. The closing date for entries will be 1st August 2013.
3. All knives to be posted to: The KGSA Competition 2013  
Herbst Knife-making Academy  
P.O.BOX 59158  
Karenpark  
0118

Or: Delivered to HERBST KNIFE-MAKING ACADEMY  
31 Harmse Ave  
The Orchards x 11  
Akasia

4. Entry fee will be R100-00 (Postage not included).
5. JUDGES — GUILD MEMBERS: GAWIE HERBST, BERTIE RIETVELD AND GUILD CHAIRMAN, CAREL SMITH.  
RESULTS WILL BE ANNOUNCED AT THE GUILD SHOW FRIDAY EVENING.

6. Sponsors: SOUTH AFRICAN KNIFE-MAKERS GUILD - [www.kgsa.co.za](http://www.kgsa.co.za)  
HERBST KNIFE-MAKING ACADEMY - [www.herbst.co.za](http://www.herbst.co.za)  
BERTIE & MELINDA RIETVELD - [www.rietveldknives.com](http://www.rietveldknives.com)  
KEVIN & HEATHER HARVEY - [www.heavinforge.co.za](http://www.heavinforge.co.za)  
ANDRE THORBURN - [www.thorburnknives.com](http://www.thorburnknives.com)  
KLINGSPOR SANDPAPER - [www.klingspor.com](http://www.klingspor.com)

## FIRST PRIZE (R20 000.00)



1. GUILD PRIZE
2. HERBST ULTIMATE GRINDER  
+ INVERTER + ALL ATTACHMENTS
3. ZIPPIT BAG

## SECOND PRIZE (R2600.00)



1. THORBURN LINER-LOCK COURSE
2. RIETVELD DAMASCUS
3. ZIPPIT BAG

## THIRD PRIZE (R1100.00)



1. HEAVIN DAMASCUS
2. KLINGSPOR HAMPER
3. ZIPPIT BAG

\*\*\*\*\*

Competition is open  
and entries may be  
submitted from  
1 July - 1 August

\*\*\*\*\*

# HERBST

## KNIFE-MAKING ACADEMY

KNIVES • TRAINING • MACHINES • SUPPLIES

[WWW.HERBST.CO.ZA](http://WWW.HERBST.CO.ZA)

**CHAIRMAN****CAREL SMITH**CELL: 071 8819960  
carelsmith@therugby.co.za**VICE- CHAIRMAN:****WILLIE VENTER**TEL: 011 7532887  
willie.venter@porsche.co.za**2012 Committee :****MEMBERS:****ANDRÉ THORBURN**TEL: 014 7365748  
CELL: 082 6501441  
andrethorburn@gmail.com**KEVIN HARVEY**TEL: 013 2530914  
CELL: 082 4424840  
kevin@heavenforge.co.za**MIKE SKELLERN**TEL: 039 3192537  
CELL: 073 6414520  
skellern@venturenet.co.za**BERTIE RIETVELD**CELL: 083 2328766  
bertie@rietveldknives.com**SHOW CONVENER****Marietjie Thorburn**TEL: 014 7365748  
CELL: 082 6501441  
thorburn@icon.co.za**WEB MASTER****HILTON PURVIS**TEL: 021 7891114  
CELL: 083 7891114  
hilton@telkomsa.net**MEMBERSHIP****ADJUDICATORS:****JOHN ARNOLD**TEL: 0119581110  
CELL: 082 3892772  
jarnold@randwater.co.za**ERICH VOSLOO**TEL: 011 9074632  
CELL: 073 2321562  
erichv@vodamail.co.za**JOHAN VAN DER MERWE**TEL: 011 9077176  
CELL: 083 2663411  
mdynamic@tiscali.co.za*Chairman's Chat*

Ons almal ken daardie gevoel wat oor jou spoel as vroulied vir jou vra "ag proe net gou of die melk nog reg is toe". Jou ego verhoed jou om te weier maar die wete dat dit dalk n aaklige ervaring gaan wees gee jou krielings. Net so voel ek en ek glo elkeen anders elke jaar oor die opkomende skou, baie opgewonde maar tog met die duiweltjie in die agtekop draai dat jy dalk by die skou nie so goed gaan doen soos jy graag wil nie. Ek dink dis n goeie ding – dit hou ons op ons tone, dit gee jou net daardie ekstra bietjie motivering om net daardie ekstra bietjie moeite aan elke mes te doen. Net daardie ietsie wat dalk mag veroorsaak dat n klient eerder jou mes in sy sak wil druk as jou buurman sin.

Dit is hierdie gesonde kompetisie wat ons Gilde dryf, dit motiveer ons om op datum te bly met tegnologie, vakmanskap en nuwe idees en bo al inspireer dit ons om met nuwes vorendag te kom. Ons hou daarvan om onself aan mekaar te meet. Om n mes te verkoop se lekker lê veel eerder in die feit dat iemand bereid is om jou mes bo almal sin te kies en met sy eie geld daarvoor te betaal as in die geld self. Die geld is eintlik jou trofee.

Nou ja verlede jaar het ons almal n paar mooi trofees bymekaar gemaak en ons hoop en vertrou dat hierdie skou ook so n reuse sukses sal wees. Dit lyk asof ons twee van die beste oorsese kopers oorreed het om moontlik hierdie jaar ons skou te kom by te woon. Beide van hulle was beindruk met die pryse wat messe verlede jaar voor gegaan het en ek glo dit was die hoof motivering waarom hulle bereid is om te kom. Ek wil dus op almal n beroep doen om nie nou skielik mal te gaan met hulle pryse nie. Dit sal verseker dat ons hulle nooit weer gaan sien nie en gaan ook ons getroue lokale ondersteuners afskrik. Hierdie kopers is besigheidsmanne wat groot onkoste aangaan om hierheen te kom en wat n bestaan daaruit maak, dit is nie versamelaars wat bereid is om n bietjie meer as nodig te betaal nie. Om so n klientebasis op te bou is moeilik en vat jare maar een swak skou is genoeg om dit te vernietig.

Kortom wil ek dus op u n beroep doen om baie messe te bring, verlede jaar was amper helfte van die uitstallers uitverkoop teen Vrydagaand en het hul tafels Saterdag leeg gestaan.

Laat ek julle dus nie langer voor die grinder weghou nie - daar lê n hele paar lang nagte voor vir ons almal. Sterkte met die mesmaak - hou die vingers heel.

Voorspoed en skerp wees!

Carel Smith

## De-Whiskering of Wooden Handles

The technique of de-whiskering of wood comes from old style cabinet and gun-stock makers, and was used prior to the final finishes whether French Polish, varnish etc. What this entails is the slight damping of the wood with water using a damp sponge or spray bottle (some methods describe using vinegar). What this does, it causes the fine fibres on the surface of the wood to swell up and raise a "whisker" which when dry causes the wood to feel rough. Once the surface is properly dried these whiskers can then be gently sanded off (I use 400#). Be careful of sanding too much which will then expose new wood with un de-whiskered fibres which will then raise later. Sand the handle to the final grit size.

I came across this technique after a fishing knife that I had made many years ago using imbuia wood was returned to me with wood in a shocking condition. The surface was very rough and almost splintery with no remnants of the initial polish I had put on it. The feedback from the client was that it went like this the first time he used it when it got wet. Re-sanding, raising the grain and removing it with wood sealing after has left the knife in great condition since then. The benefit of de-whiskering will be experienced when the knife is used and got wet either by use or by washing and there will be no coarse fibres to swell causing the handle to feel rough.

Some woods benefit greatly from this method such as those with a relatively open grain such as oak, curly maple, boekenhout etc. I have found some fine whiskers raising on hard woods such as olive, rooibos and even on bone.

### Sealing the wood.

Most makers would opt for modern wood sealers such as a sanding sealer or polyurethane. I, on the other hand opt for the old style wood finish using the oils that harden on drying. I use this method especially on my forged knives as it goes well with the "old fashioned" way I make my blades.

I generally use boiled linseed oil (raw linseed oil takes too long to dry). I have a small bottle with a 50/50 mix of boiled linseed and turpentine (white spirits can also be used, but is not easily obtained) in which I dip the handle fully for a good period of time allowing penetration of the thinned oil. Depending on the wood, 10 minutes to half an hour will suffice. For the rest of the day, I will keep an eye on the handle and keep wetting it and spreading it with my finger and then by evening, gently wipe it off using a tissue and one then needs to give the handle time to dry. This happens usually within a day.

I will continue wetting the tip of my finger with the neat boiled linseed oil and spreading it thinly over the handle daily for a couple of days. One will notice that there is an oil build up that can become gummy if you are applying too much. Thin coats are the secret. Give this handle now time to rest and the oil to harden up fully, usually two to three days.

By burnishing up the wooden handle using 0000# steel wool which is very fine and soft, reminiscent of candyfloss, you will find your handle has a deep matt lustre. The reason for using the steel wool is that it does not clog up as fine water paper will. The steel wool can be lubricated during the burnishing process with either turpentine or more linseed oil. Wipe the handle dry with tissue and once again put the tiniest amount of oil over the handle and then burnish the handle with the palm of your hand. Rub until it feels hot. You will notice little beads of "sweat" emerging from the surface of the wood – this is good. Leave this treatment again to dry and repeat the palm rub oiling for a further one or two times.

This is a slow and time-consuming method, but it gives a different kind of polish to the wood than buffing does. For me, buffing has a too glossy and artificial look. This is a matt shine. Although this takes many days to complete fully, one is only spending two or three minutes on it every other day and I like it, give it a try, you might like it too.

Other oils to consider using, using the same method are Tung oil, Danish oil and some gunstock oils.

In one of the gunstock oil pamphlets they described this method as "once an hour for the first day, once a day for the first week, once a month for the first year and once a year thereafter for maintenance."

All these products can be obtained from the "Hardware Centre" 011 791 0844.

Kevin Harvey



# Annual Knifemakers Guild Show

Mosaïek Lifestyle Centre, Communio Exhibition Hall, Danielle Str (off Davidson Str / 14th Ave), Fairland, Johannesburg  
GPS co-ordinates, X: 27d56.1069m, Y: 26d08.7500m / S 26.14584, E 27.93528

**Friday 30 Aug,** 15h00 - 19h00, admission : R50pp

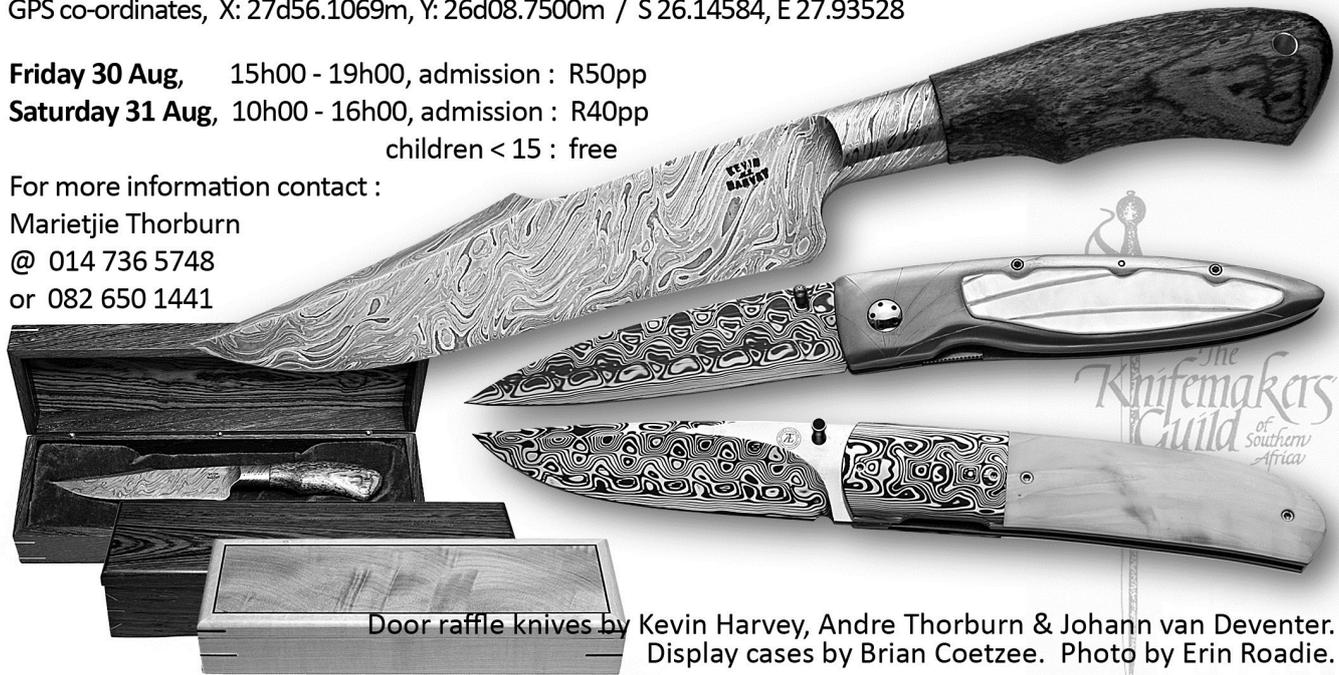
**Saturday 31 Aug,** 10h00 - 16h00, admission : R40pp  
children < 15 : free

For more information contact :

Marietjie Thorburn

@ 014 736 5748

or 082 650 1441



Door raffle knives by Kevin Harvey, Andre Thorburn & Johann van Deventer.  
Display cases by Brian Coetzee. Photo by Erin Roadie.

\*\*\*\*\* There are 3 knives in the pic, where there's normally 2 ... Here's the reason why...in an effort to update and grow the digital database, visitors to the Show this year will stand a chance of winning the Andre' Thorburn folder if they enter the draw, using their email address.

Wow, a great way to add a knife to your collection !! \*\*\*\*\*

The book costs R 295.00 + postage

To purchase:

**Contact**

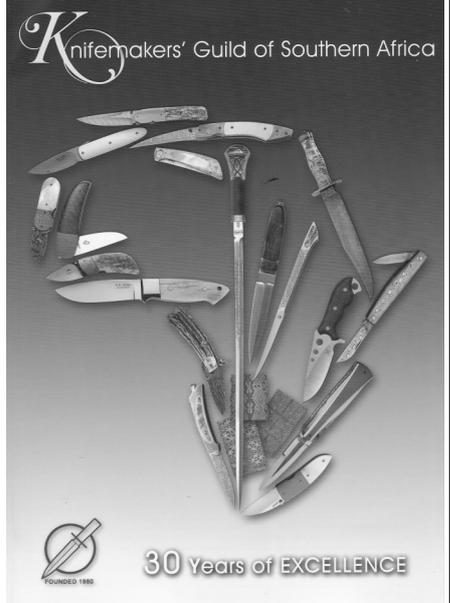
**Melinda 071 303 5259 edgehog1@gmail.com**

**Marietjie 082 6501441 marietjiethorburn@gmail.com**

**OR**

**You can buy a copy at the Guild Table at the Guild Show**

**30 - 31 August 2013**



## Harness that tracking demon

Ed's note — This article first appeared in the October 1992 issue of Edgehog and has as much relevance today as it did then.

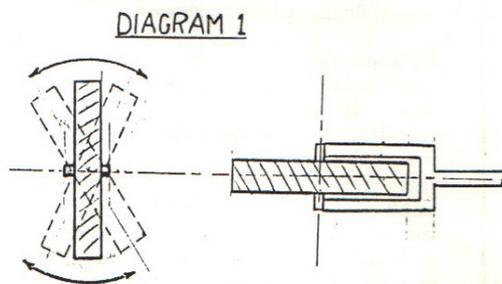
Most knifemakers give little thought to their most used machine, the belt grinder, when it comes to design and sound engineering principles.

These principles are simple and when applied the results are a grinder that tracks precisely and a belt that won't wander when grinding.

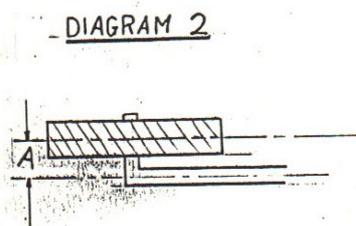
To start, line the wheels up using a straight edge to ensure that they are in line.

The back wheel or driver should always be crowned to aid in tracking, as belts tend to move to the highest point of the wheel.

Tracking should be done by twisting the belt in a fashion that can best be described by imagining the wheel mounted on a fork with a shaft running parallel to the belt. By turning the wheel about the axis of the shaft, is the motion that we are after.



The absolute ideal position for the shaft is "in" the belt, but a shaft next to the wheel is also acceptable - but keep it as close to the wheel as possible, otherwise the wheel will move in an arc that is no good.



This is the best tracking system that there is, although other systems may work, they are not as good because they put undue stresses on the sides of the belts and distort the belt. Because it is easy to twist the belt when it runs over 2 wheels, and more difficult if more than 2 wheels are used, try and avoid the multi wheeled machines.

It's amazing when one looks around and sees how many grinders employ the wrong principles, even on commercial machines.

One last tip - fit your grinder with a cable and foot pedal to assist with slackening belts as there is nothing more infuriating than having to pull the lever with one hand and using the other hand and chin/shoulder try to unravel and fit that completely twisted up belt.

~Bertie Rietveld

## English Curiosa Knife & Fork Pistol

Sent in by Hilton Purvis

.28 caliber, 3 1/2-inch blued octagonal barrel with top flat marked: Linsley Bros. Leeds. Engraved floral scrolls at breech and gripstrap. Folding trigger. Engraved hammer. Ivory grip scales, the sides removable by pushing forward, removing the scales to create individual knife and fork elements with folding blades.



theknifeshop

### Knifemaking Supplies

**Juan Bernard**  
072 485 9733

[sales@theknifeshop.co.za](mailto:sales@theknifeshop.co.za)  
[www.theknifeshop.co.za](http://www.theknifeshop.co.za)

Men say a women's place is in the kitchen, just remember, that's where all the knives are



your eCards  
someecards.com



Find us on  
**Facebook**

Who is on Facebook ? Send us your Knife group / Knife Club / Personal page details / link and we'll publish it here and you'll gain more followers:



- ◆ **Knifemakers Guild of SA** - members and interested knife enthusiasts are on the group and we like to see our members knife pics here.
- ◆ **The Knifemakers Guild Show - SA** - Marietjie updates the page with info regarding the upcoming Knife Show.

## The curse of perfectionism : In pursuit of the perfect knife

This article is for the perfectionists among us, if you are a "It's good enough " type, please stop reading. Is there such a thing as the perfect knife? Bear in mind that a knife has 2 elements, Design and Execution. The first one first, is there a perfect design ? Maybe a Loveless drop point hunter ? Or what about a Fanie la Grange Kilimanjaro? My point is that it is a very subjective element, but having said that, there are people that can design better than others, and it all comes down to how much designing you do. The more you do it, the more you will grow and better you will become. That is why it amazes me that so few knifemakers spend time doing this. To come up with a good design you need to draw a lot! You can copy a good design, but it's cheating, come on how can you put your name on a knife when you cribbed the design?

Because design is so objective, we have to compromise a little here, lets just say that a good design is one you did yourself and that most people that see it will like, with proper proportions and is pleasing to the eye.

The second element, namely execution is another matter altogether. It can be judged to the extreme. The knife that I have seen that comes closest to perfect is a Guild entry boot knife that was made by Peter Szkolnik, some years back. I looked at the knives on his table and was drawn to this knife instantly, the grind is perfect, the fit amazing, the symmetry out of this world, the polish on the blade , beyond reproach, in short I stared at this knife for a good 15 minutes and then bought it !! I still look at it from time to time and then I get very humble. It gets worse when I learned he made it on the balcony of his flat with almost no tools.

Over the years I have tried to develop a formula to get closer to the perfect knife, but as all knifemakers know, stuff happens and things go wrong over which you have little or no control. I once made a batch of 5 knives together and thought to myself that one of them is going to be perfect and that one I will keep. Guess what, every one of them had a small thing that went wrong. Admittedly, these are small or minute things that a collector will probably never see, but I know it is there.

At the first Italian Guild Show that I attended, the famed dealer, Aldo Lorenzi came by my table and looked at a particular knife and through an interpreter told me that he will tell me what is wrong with my knife. I thought he was going to criticise the fit or grind, but he said the screws slots were not facing the same way ! I told him, without missing a beat, that I can fix it immediately, and I took out my micro screwdriver and loosened the screws until they all lined up. He looked on in amazement, then asked me to tighten the screws again as he wishes to purchase the knife !



KNIFEMAKER ~ BERTIE RIETVELD

IMAGE ~ SHARPBYCOOP

After thinking about this perfect knife a lot over the years, I came up with a formula that will get any knifemaker very close to the goal every time.

It goes like this : Do everything on the knife well, every aspect should be done as well as possible, forget about the whole knife....break it up into small tasks and do each one well, then you put it all together, not one area will be letting you down and don't be scared of discarding a knife if you are not happy with it. If you are fitting something, be a stickler and don't stop until the fit is as good as you can get it. It is going to take a lot of time, I hear you say.. Let's put that into perspective...What is the life of the knife? Maybe 100 years, maybe 500 years? Now you are too schnoop to spend another 30 minutes getting it right ? Hey, it's your name on there !

~ Bertie Rietveld

The Griffin Battle Axe  
Featuring carved Bronze pommel and medallions on the head,  
Hand forged axe head, Titanium haft and faceted Dumortierite  
stone handle

# Workshop Safety

## *What is workshop safety*

Safety in the workshop... what exactly does that mean? Does that mean you are unsafe, or prone to have accidents? Does it mean your shop is unsafe, and it is only a matter of time before you hurt yourself?

The baseline answer to those two questions is you should do something about those problems you are concerned with and fix them. If you have foreseeable problems, fix them before they cause an accident. **Because they will**, and probably when you least expect it.

So your shop is safe... why should you use any safety gear? A common mentality is that *I'm a safe person*, and *my shop is a safe place to be*, why do I need to wear safety gear? The **entire** reason for safety gear and practices in the shop is for those things which happen unexpectedly. Those things which you **can not** predict and compensate for.

Like what you ask? Like your hand slipping and you grind away half your finger on a fresh 36 grit belt, or the drill press grabbing your sleeve and winding your arm off! Keep the belt on that drillpress slack so it can slip if it needs to. You need both your arms!

If you **feel unsafe** about something, that is a powerful hint you are giving to yourself. **Stop right there and think!** and don't do it *one last time*. That *one last time* could be the one that sees your thumb lying next to the bandsaw. Many times one gets a near accident, if you are that fortunate, take steps to avoid something similar happening again.

A person's mind has some powerful intuition, rely on it.

Before going on to be more specific, lets look at some of the things we want to protect:

- Eyesight.
- Hearing.
- Limbs and appendages.
- Sense of touch.
- Respiratory System
- Skin
- Mortal Life itself. [If you are immortal, it may pay to be safe anyway, since living forever with missing parts may be even worse!]
- Pleasurable experience.

## 1 *Philosophy of Safety*

People have appendages and other components they hold near and dear. There is a certain amount of redundancy in our bodies systems. However, the fallback on using those often sucks. Binocular vision with depth perception is way better than vision from a single eye. A thumb makes grasping things easy ... lacking one is most frustrating. Hearing injuries tend to catch up to you later in your life ... and they make themselves heard every minute from then on. Ever heard of Tinnitus?

Your 10 best tools, your fingers, look after them, there aint no spares.

There is no more important thing than these -- Safety Glasses

There are some important things to know about safety gear:

1. Safety gear must be used reliably.
2. Safety gear must be easily accessible and ubiquitous.
3. Safety gear must be a pleasure to use.
4. Safety gear must be in good condition.

The **easiest** way to use safety gear in your shop is to **use it reliably**. Make the safety gear the **first thing** you touch when entering your shop. Make it the last thing that comes off when you leave the shop. Use it whenever you are in your shop, even if you aren't planning on doing anything. Safety glasses on when you enter the shop, and off when you leave. I can not stress that more strongly -- make it an ingrained habit to have those glasses on in the shop. Then think about wearing them for other projects when you get some tools from the shop. One day you may find yourself wearing them while eating lunch out of the shop -- way better than not having them on when you need them.

Safety gear must be **easily accessible and ubiquitous** If your safety gear isn't out and easy to use, you will tend not to use it. Don't make it a big deal to use your safety gear. Have it near to hand to areas where you might need it. Have special places to put your safety gear so it is always easily visible and available for immediate use. Better yet, keep safety gear in multiple places in your shop, such as by individual tools and machines. If there is always safety gear within reach, it will be easy to use, and you will use it. Make sure there is safety gear for shop visitors to use too.

Safety gear must be a **pleasure to use**. If it isn't you won't use it because it is a pain to use. Safety glasses which distort your vision or fog up too easily won't be used. If you want to listen to the radio when you work, get some comfortable hearing protectors with a built-in radio. It is well worth the time to find safety gear that you like to use. The combined cost of a pair of good safety glasses, a high quality hearing protector, and even a vapour mask is inexpensive compared to a single

trip to the doctor or the emergency room. Ultimately you'll have more time and money to spend in the shop too!

You need to **maintain** your safety gear in **good working order**. If it isn't it may be its own safety hazard. If your safety glasses are scratched don't try to save them. Just throw them away and grab another pair from the safety equipment bin. If they are dirty, clean them so you can see clearly. A microfiber cloth cleans those things almost as good as new, and costs less than a pair of safety glasses. Always use a push stick on the bandsaw. Keep spare safety equipment around for when something fails, instead of continuing on with out the safety gear. Oh, yeah, make sure there are guards in place over V-belts and other moving parts on machines.

## Personal Safety Gear

Now I'll mention some of the personal safety gear, and why you want to have it. This is really obvious, but sometimes you want to think of things which perhaps you don't consider often enough ...

- Safety Glasses: Vision is important. Bad things happen by accident. Wear them. Safety glasses also protect your eyes from *chemical* injury -- remember to use them when working with colouring baths or etching solutions, etc. If you are doing a lot of liquid work, get a pair of the spill-proof chemical style goggles as well. They aren't good for all-around use, they tend to fog up. A full-face shield is another option, especially if working with tools which throw large things, such as a lathe.
- Hearing Protectors: Many of the power tools in the shop, both small and large, output damaging intensity and frequency of sound. Routers and Tablesaws are the two worst offenders which are popular that come to mind. Exposure to sound tires us just as labour does; using hearing protectors for longer exposure to quieter tools can be a benefit.
- Push sticks: Keep your fingers away from spinning blades on Saws, Router tables, jointers and other tools. If you can't hold the work with the push-stick... find another way to hold the part. Maybe try a vicegrip, so the saw cuts it instead of your hand.
- Anti-Fatigue & Anti-skid mats: A concrete shop floor can make your legs and back tired sooner. It may not have the greatest footing. These mats keep you safe, and also protect edged tools (or your prized knife) that you may drop.
- Shop clothes: Why are shop clothes a safety item? They are a safety item because proper shop clothes won't get tangled in your machines. You won't be so worried about bleeding over your shop clothes when you do get hurt. You won't go out of the way to avoid dirtying your good clothes, and put yourself at risk inadvertently. Long sleeves and pants provide armour which help protect your skin from sparks and from flying debris from

power tools. They protect your skin from chemical splashes. Good boots protect your feet from the dropped razor-sharp Bowie or something heavy falling, or random sharp trash on the floor.

- Dust Mask: Grinding steel produces dust, which floats in the air. This dust is collected by our lungs and nasal passages. Some of the steel and wood dust can be really bad for you. Exposure to steel dust can be very bad for you. Worst case, the Damascus particles starts to rust in your lungs and you die young from emphysema or lung cancer. Even if you have a dust extractor, it doesn't catch all the dust. Wear a good mask, the 3M ones are really good, but pricey. There is another cheaper version on the market lately that works just as good and it has screw on cartridges and the combo will only set you back R100. It's called Evrigard and made locally.
- The humble drill press can really hurt you, clamp everything down or put it in a vice when drilling holes, especially larger holes, the drill might grab and spin the item you are drilling into your hand.....imagine a knifeblade spinning at 1000rpm slicing into your fingers.

## Shop Safety Gear

- Dust extractor
- Guards on moving machine parts
- Push Sticks.
- A good dose of common sense
- Sharp tools/belts reduce pressure you need to apply
- Knowing how to use your tools.
- Make sure all electrical connections are sound
- Clamps
- Fixtures and Jigs to hold small parts

Workshop safety boils down to common sense, you know when you are taking chances, change your mindset, if you want to gamble go to the casino, the odds in the workshop is much less in your favour and if you spend enough time pushing the limits, you WILL get hurt. Be alert and don't take chances Be safe.

John Aldridge (I've still got all my fingers)



### FOR SALE

Contact Greg  
0824920677

Cincinnati Chomein  
Precision drill press  
R6000

Also oxyacetylene  
set (large bottles)

## A Layman's Understanding of Damascus Steel

**By Parker Brown**  
**ARMA Denton, TX**

The term "Damascus steel" can refer to two different types of ferrous (containing iron) materials characterized by the watery pattern produced from the controlled mixture and physical manipulation of the iron and steel. Western Europeans were first introduced to this material around the 3rd-4th centuries from the historical trading center of Damascus, in present-day Syria. While there are examples of this material being produced in Damascus itself, its technical and physical origins are from India and the Middle East. Damascus steel is not to be confused with damascene, which is a process of inlaying gold leaf onto the surface of steel for the purpose of decoration.

Cast Damascus steel, known as **wootz**, was popular in the East. It's produced by melting pieces of iron and steel with charcoal in a reducing atmosphere (lacking oxygen). During the process, the metals absorb carbon from the charcoal and the resulting alloy is cooled at a very slow rate. This produces a material with a visible crystalline structure of varying carbide contents. Forging the material into a desired shape (such as a sword blade) alters the crystalline structure into the familiar waving or watered pattern that Damascus steel is known for. This technique is extremely work intensive and requires a high degree of skill to keep the necessary temperatures constant throughout the process. The resulting volume of material produced is substantial enough for a larger-scale production house, but would be impractical for smaller individually produced pieces.

Fabricated Damascus steel, known as **pattern-welded steel**, was more popular in the West and produced essentially the same product as wootz with less labour and less yield. Layering two or more linear elements of iron and steel and forge welding them together produced pattern-welded steel. Forge welding requires the stacking of two pieces of metal and hammering the two together while the whole is at a high temperature. The surfaces of the individual metals are at the near molten state while the core of the metal is still solid. By forcing the surfaces together at this temperature (with the presence of a flux to seal the joint off from oxygen), the result is a welded bond, essentially forcing the two metals into one. Stretching out the length of the composite material and forge welding it back onto itself results in multiple layers that can be manipulated to produce the same watered pattern as wootz.

Besides their beautiful aesthetic appearances, both wootz and pattern-welded steels produced a metal that was harder and more flexible than traditional wrought iron. These features were critical in the making of a long bladed weapon, such as a sword. While the use of wootz steel is primarily linked to India and the Middle East, Norwegian smiths were masterfully producing pattern-welded blades in the 6th century A.D., centuries before the famed pattern-welded katana developed during Japan's Kamakura period (ca. 1185-1333). However, despite its famed durability and quality, Damascus steel is a relatively heterogeneous (unevenly mixed) material in comparison to modern high-carbon steels produced using the 19th century Bessemer process. For its time, it was a magnificent material that was costly and expensive to produce and allowed smiths to produce quality long-bladed weapons.



*Parker Brown is an apprentice armorer and proprietor of [Crescent Moon Armoury](http://www.crescentmoonarmoury.com).*

<http://www.thearma.org/essays/damascus-steel.html>



**Knife and Cutlery Boxes**  
 Artisan Boxmaker  
 Brian Coetzee  
 083 372 8784  
[tree2tree@webmail.co.za](mailto:tree2tree@webmail.co.za)



**CREATIVE KNIFE SOLUTIONS**  
 "Source and Supply Quality  
 Custom Made Knives"



[www.creativeknifesolutions.co.za](http://www.creativeknifesolutions.co.za)



Scrimshaw Artist

**SHARON BURGER**

Tel/Fax: (+27 11) 615 8880  
 Cell: 083 789 1675  
 Email: [scribble@iafrica.com](mailto:scribble@iafrica.com)  
[www.sharonburger-scrimshaw.co.za](http://www.sharonburger-scrimshaw.co.za)

Associate Member  
 The Knifemakers Guild  
 of Southern Africa

*Booyesen Engraving Studio.*



Cell: 073-284 1493  
 Home: (011) 915-7054  
 Email: [chris@cbknives.com](mailto:chris@cbknives.com)  
 (Near Mall @ Carnival)  
 Lawrence Rd, Dalpark Ext.11, Brakpan

Hand Engraving  
 Fire-Arms & Knives  
 Jewellery  
 Inside Ring  
 Watches

## Out 'n' About



Connie and Bill Hevron — collectors from USA, visited Bertie—June 2013



Meet Val, our cutting table caretaker and loyal Guild supporter @ Heavin Forge. She likes Heather too!!



Anyone have photo's to share ? Send them soon...next issue of Edgehog will be after the Guild Show. Send pics to [edgehog1@gmail.com](mailto:edgehog1@gmail.com)



2013 Guild Committee at a recent committee meeting



Bertie, Barry Davis and Ricardo Velarde @ Boston Art Knife Classic Show April 2013

**The last word....**

**Price is what you pay. Value is what you get ~ Unknown**