

Findings and analysis of the testing process of **THE BADAXX**



As performed by
Sean Wilson and Matt McEveney of
SEARCH & DESTROY TRAINING & TOOLS, LLC

The Historical Perspective

Being a student of fire service history, and history in general, often offers an interesting perspective when thinking about tools and their evolution.

The original pick-headed axes were not used by firemen, they were used by seamen. For hundreds of years of maritime history, this tool was called a “Boarding Axe”. It was used by multiple sailors working as a crew to hook the dock or another ship and draw their own ship closer. After doing so, it was also a good weapon for hostile boardings by pirates, “privateers” (government-sanctioned pirates), or during naval battles.

Firemen, for all their good qualities, are not known for being quick to accept new ideas. It took centuries for the fire service to absorb the pick-headed axe. We hope the refinements Scott McCann has made with the Badaxx will not take as long to integrate.



Introduction

We offered Scott McCann, the owner and inventor of THE BADAXX, help with testing his pride and joy. He asked us to put it through its paces, not spare the rod or his feelings, and do our best to test its functions and “destroy it”.

What follows are the results of **SEARCH & DESTROY TRAINING & TOOL**’s extensive testing of the the Badaxx, as prepared for the manufacturer. This expanded version of the report includes all positive and negative findings, our unabashed opinion of the tool’s individual components and of the tool as a whole, and additional pictures and descriptions for interested firefighters and fire officers.

In all, we performed many different types of tests over several weeks. We covered its function as a general-use fireground tool, its use in roof ventilation, its use as part of an irons-set and as a stand-alone striking tool, and—of course—its bailout functions.



Juxtapositions & Comparisons

In this analysis report, we will compare the function and individual components of the Badaxx again and again to its closest cousins (evolutionarily speaking):

- The standard 6 lb pick-head axe
- The Pig



Full Disclosure of Facts

In the interest of fair reporting, we would like to disclose the following facts:

- We were given one Badaxx to test and review, free of charge.
- We sell tools.
- We sell Fire Hooks Unlimited tools, and The PIG.
- We do not, at present time, sell the Badaxx.
- We offered, *on the condition of the tool performing well in our tests and being deemed in our eyes a tool we would use and carry ourselves*, to distribute the Badaxx. Scott McCann (the inventor), turned down that offer at this time but left the door open to partnership at a later date.
- At the completion of testing, our company purchased one additional Badaxx using company funds for inclusion in our classes. We did so through the Badaxx online store, paying full price as a regular customer.

Full Disclosure of Attitudes

In the interest of fair reporting, we would like to disclose the following attitudes:

- We are tool-nerds.
- We like firefighter-designed tools.
- We are very busy, and do not engage in tool-testing or reviewing of tools that we think are going to suck or perform poorly. Life's too short.
- We believe strongly in PERSONAL PREFERENCE when it comes to tool selection, and the idea that no single tool is right for every individual.
- We feel that attitudes regarding head weight, overall weight, length, and (to some extent) function are sovereign to the individual.
- We believe that an individual's preference for one tool over another—even our own—does not mean that one tool is necessarily “superior” to another. Only that it is preferred by that individual.
- *We feel our job in reviewing and testing tools is to get as much information as possible into the hands of the possible end-user so that he or she can make a more informed decision for themselves.*

PART ONE:

Nomenclature, Materials, & Components



Description

The Badaxx is premium tool hybrid of a pick-headed and flat-headed axe with full striking capability and a heavy emphasis on last-resort bailout functions for firefighter survival.

It is designed with a uniquely crafted head allowing it to perform work as a blunted axe or as a pick. The blade of the axe has a “beard” that extends downward toward the handle that can be used to hook the decking of a roof for use as a bailout anchor. The head has a large rectangular notch so that it can be married to a halligan bar. The top of the head also has a shallow opening that can be used as a gas valve shut-off, and the area around it is knurled to offer traction when the tool is used as a step.

The handle design is as innovative and well thought-out as its head. The handle, made of anodized aluminum, has several notches built into it that can be used as hydrant wrench openings or as attachment points for a rope in a hasty bailout situation.

It can be carried as part of an irons-set, or carried alone for use as an interior search tool or roof ventilation tool.

Overall Length

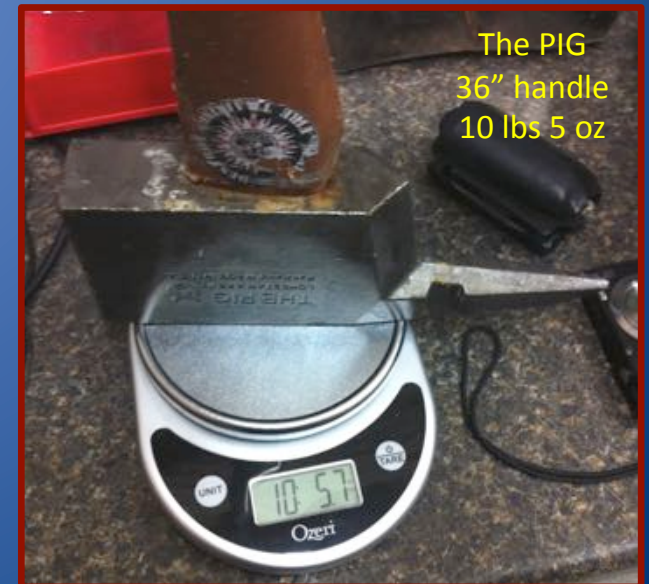
OVERALL LENGTH: 34 inches



Overall Weight

OVERALL WEIGHT: The Badaxx weighs 7 lbs 8 ounces (7.5 lbs).

To compare that to the *overall weight* other tools that the Badaxx is descended from, a standard pick-head axe weighs 8 lbs 8 ounces (8.5 lbs), and the PIG weighs 10 lbs 5 ounces (10.3 lbs).



Materials

The head of the Badaxx weighs 5.5 lbs and is investment casted from 4150 tool steel. After the machining processes are complete, the head is then quenched and tempered to 45-50 on the Rockwell Hardness Scale.

The handle is precision machined from one solid plate of 7075 T651 tempered aluminum. This is an aerospace-grade aluminum, and is one of the toughest aluminum alloys available. The handle is anodized for a better grip and corrosion resistance. The handle comes in gloss black and six other custom colors (including flat black). The overall weight of the handle itself is 2.5 lbs.



Made in America



The Badaxx head and handle are both made in America.

The Head

THE HEAD: The head itself is flat over the bulk of its surface and measures 1 inch thick, and 10 inches wide by 5-1/8 inches tall at the striking face.



The Head

THE BLADE: The “blade” of the head is uniquely blunted. Rather than a completely flat surface (like a sledge or the PIG), or two greater or lesser angles eventually coming to an eventual bladed surface (such as a traditional axe or Iron Fox Axe), the “blade” of the Badaxx starts and ends with a series of four 45-degree angles.

The striking surface is a one-half ($1/2$) inch wide flat surface which allows for striking another tool such as the halligan. The striking surface is 5- $1/8$ inches long, and is canted at an 85-degree angle to compensate for use on the angle of a peaked roof.

The unique angles of the striking surface are intended to concentrate force in a narrow crushing area, without being so narrow as to be a cutting surface (like an axe). It also is intended to create less penetration during roof operations and prevent the head from getting wedged into the roof.



The Head

THE BEARD, PART ONE: The blade of the Badaxx has what is called on axes a “beard”. With a conventional axe this is usually done to increase cutting area and act as protection for that portion of the handle during over-strikes. On the Badaxx, the beard was designed very carefully with firefighter survival in mind.

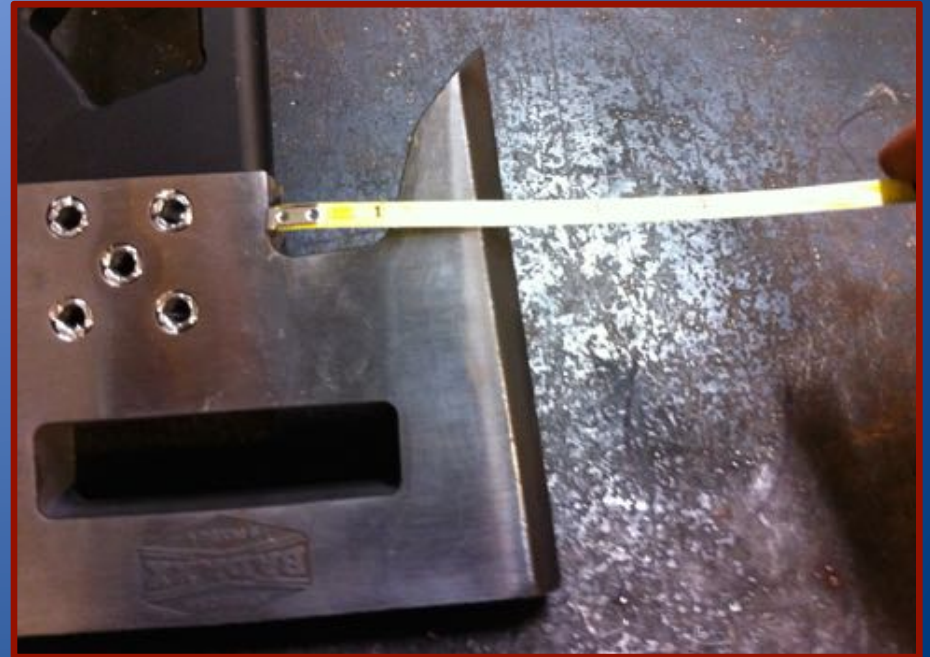
During a rooftop bailout situation, the Badaxx may be used to punch through the shingles and decking of a roof, and then the beard may be used to hook the decking....creating an anchor point with which to effect a hasty rappel from.



The Head

THE BEARD, PART TWO: The beard itself extends down approximately 1-3/4 inches below where it connects to the body of the head.

The cavity the beard creates between the interior face of the beard and the handle/body of the head is 1-1/8 inches at its narrowest point, and 2 inches at its widest point.



The Head

THE PICK, PART ONE: The pick is 4-1/2 inches long and 1-inch wide. Height of the pick is 1-1/4 inches tall when measured at the point where the pick originates from the the head.

The top surface of the pick is set at an angle from the top surface of the rest of the head to create leverage when prying with the top of the head resting on a surface acting as a fulcrum. The bottom surface of the pick is set at an 80-degree angle from the back of the head. This was done to drive the pick in deeper when force is applied to the top of the head....such as when using the tool as a step when operating on a peaked roof, or when utilizing this portion of the tool as an anchor point for hasty rappelling.



The Head

THE PICK, PART TWO:

The pick is 1 inch wide for most of its length until the last inch, where it narrows to its termination point. This was done to ease penetration into building materials, increase grabbing ability, and prevent the pick from wobbling loose when hooked (like a standard pick-head axe often does).



The Head

THE MARRIAGE SLOT, PART ONE: The rectangular cavity in the head measures $3\frac{1}{8}$ inches wide by $\frac{3}{4}$ of an inch tall. This slot is designed for use in marrying the Badaxx to a halligan bar for use as an irons-set.



The Head

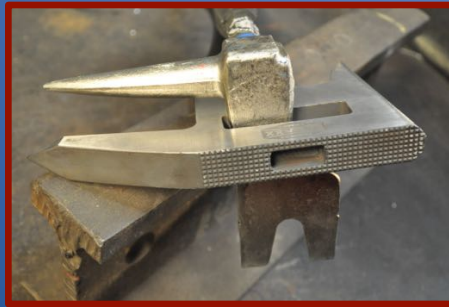
THE MARRIAGE SLOT, PART TWO:

The marriage slot is wide enough (3-1/8 inches) to accept any standard-adz or wide-adz halligan on the market today.

Standard FHU Pro-Bar,
2 inch adz



FHU Maximus Rex,
2-3/4 inch adz



Vintage Kelly Bar,
2-7/8 inch adz



Aazel Monster,
3 inch adz



The Head

TRACTION-STEP & GAS SHUT-OFF:

The top of the head has a knurled surface approximately 5 inches long designed to give the user traction when being used as a step either after being sunk into a peaked roof during roof ventilation, or to assist a firefighter into a window to conduct a VEIS.

Inside this traction area, there is a notch that will fit and turn most gas meter valves, and some residential water valves (of which there is a variety nationwide). This notch measures 1-1/4 inches long by 1/2 of an inch wide by 3/8 of an inch deep.



The Head

HEAD HANDLE-WELL & PINS:

The well that receives the handle measures 2 inches long by $\frac{5}{8}$ of an inch wide, and is machined to depth of 2 inches deep.

There is a five-square pattern of holes that receive $\frac{3}{8}$ inch stainless steel roll pins that attach the handle to the head.



The Handle

HANDLE OVERVIEW:

The handle of the Badaxx is precision machined from a solid plate of 7075 T651 tempered aerospace-grade aluminum. Overall length (without head) is 31-1/2 inches. Thickness is 5/8 of an inch. Total weight of the handle (without head) is approximately 2 lbs.



The Handle

HANDLE ARCH:

The handle is arched like an old-fashioned hickory axe handle. This was done with wooden handles to increase strength without increasing thickness, and to increase the amount of force that could be generated by swinging the tool.

It's unknown whether or not the arched shape adds a *significant* amount of strength to the aluminum handle of the Badaxx, but the whip-like force that can be generated by this shape is clear when using the tool.



The Handle

HYDRANT WRENCH OPENINGS, PART ONE:

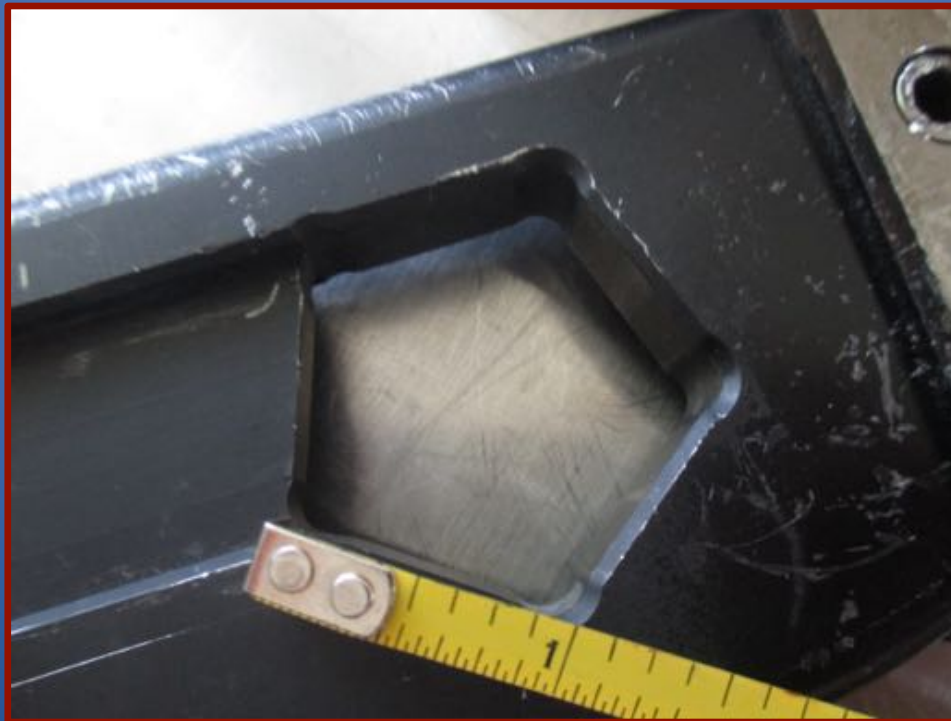
The top portion of the handle has two openings that can be used to remove hydrant caps and open hydrant valves in many parts of the country.



The Handle

HYDRANT WRENCH OPENINGS, PART TWO:

The top-most opening is a pentagonal hydrant-wrench. Each side measures one inch in length. This size pentagonal fitting is standard in many—but not all—areas.



The Handle

HYDRANT WRENCH OPENINGS, PART THREE:

The second opening in the handle is a rectangular opening measuring 1-1/4 inches wide by 1 inch tall. This will operate square hydrant caps and valves measuring 1 inch square.



The Handle

MARRYING STRAP SLIT:

The third opening in the handle is a narrow slit in the approximate middle of the handle measuring 2-1/2 inches wide by 1/4 of an inch tall.

This opening is designed to accept a special strap made out of two-inch webbing for the purpose of marrying the Badaxx to a halligan and carrying it over your shoulder.



The Handle

RAPPELLING ATTACHMENT POINT & DEER'S-FOOT:

The final opening is at the bottom of the handle. It is a large opening, measuring 2-1/2 inches wide by 1-1/2 inches tall.

Its intended purpose is as an attachment point for a carabiner, rope, or webbing during a bailout or other hasty rappelling situation where the tool is used as an anchor.



The Handle

DEER'S FOOT:

The small downward projection at the end of the handle is a “deer's foot”, meant to prevent the handle from slipping from the user's hands.



The Handle

CROSS-HATCHED GRIP:

The handle of the Badaxx has series of shallow cross-hatched cuts on one side to provide more friction at the base of the handle.



PART TWO:

Bailout Tests



Rooftop Bailout



Rooftop Bailout

We performed over two dozen rooftop bailouts using the Badaxx over two days and several training periods. The Badaxx performed just as its inventor has advertised.

The narrow and blunted “blade” made chopping through three layers of shingles and plank-decking quick and relatively easy. Once through the decking, the beard of the blade hooked easily onto the planks.

Because of its arched shape, the bottom of the handle lays in contact with the roof-line, keeping the head stable in its hooked position, without trying to “see-saw” up and down.

In all evolutions, the Badaxx felt stable, secure, and did not shift. All the large openings on the handle were used to connect the carabiner and rope.



Window Bailout, Floor Anchor



Window Bailout, Floor Anchor

Utilizing the same anchor point, created by driving the pick of the head into the floor, four firefighters effected a window bailout multiple times each.

The pick was easy to set in one swing, and its angle allowed it to grab easily. The flat, wide shape is beneficial in this for easy insertion and the angle is perfect for hooking on to floor-boards or other materials.

And, furthermore, with the handle's natural tendency to point upward toward the window that the rope is travelling out of, the pick turned as well causing it to hook deeper and bite harder into the floor. Making it far less likely to dislodge when using the large opening at the bottom of the handle to connect the carabiner and rope.

We used all the large openings on the handle to connect the rope and carabiner, to good effect.



Window Bailout, Window-Frame Anchor

Creating this anchor point by sinking the pick of the tool into either the wall adjacent to the window-frame or into the frame itself, we performed numerous evolutions using different firefighters and different windows.

The hydrant wrench notches were easy to connect a carabiner and rope to for performing hasty rappelling. Far faster than using a standard pick-headed axe and having to wrap or tie off the handle or head.

So long as care was taken to keep tension on the rope connected to the tool after it was in position, there was no undue wobble or shifting when full weight of the firefighter was applied. The tool held and stayed in position for all evolutions performed.



Window Bailout, Wall Anchor



Window Bailout, Wall Anchor

Once again, the Badaxx proves itself superior to using a standard pick-head axe because of the ease and speed with which a firefighter can connect a carabiner and rope to the top-most hydrant wrench opening (or any of the handle openings).

In this series of evolutions we created a wall anchor by knocking a hole in the stud-spaces on either side of a wall-stud, clipping a carabiner onto the top-most opening on the handle, and inserting the tool into the cavity created.

We used several different windows, creating anchor points at each, and using that anchor point for several firefighters. This was an older home with plaster and lathe walls, but we've used the same technique successfully on newer drywall walls as well. So long as the tool is firmly lodged against the stud or window-frame, drywall should be no issue.



PART THREE:

Roof Ventilation Tests



Roof Ventilation Tests

The 5.5 lb head of the Badaxx is lighter than a standard 6 lb flat-head axe, but because of the lightness of the handle, the arch of the handle, and the design of the head the Badaxx hits MUCH harder.

The blunted blade focuses the force delivered to the roof enough to put an extreme amount of stress on the shingles and decking, but without cutting like a blade....OR getting wedged into the roof like a blade. There is far less fighting of the tool trying to get it out of the roof than with standard pick-head or flat-head axes.

The downward-turn of the angle on the blade is enough to meet a peaked-roof more squarely, without being an impediment (or even noticeable) in other situations where swinging at something straight on is required.



PART FOUR:

Forcible Entry Tests



Sledge Technique



Sledge Technique

This simple technique is a fan favorite for use at working housefires, where speed is desired, minimizing destructiveness is not a priority, and the door system is relatively weak.

This is often done with an 8 or 10 lb sledge, a 6 or 8 lb flat-head axe, or with the Pig.

Obviously, the heavier tools reign supreme for this technique where a quick, bludgeoning force delivered over the course of 3-4 swings is the key to entry....rather than the slower build-up of pressure from a prying attack performed with a halligan bar.

That said, the amount of force that can be generated by the Badaxx, in my opinion, far exceeds that of the standard 6 lb flat-head axe due to the arch of the handle and the fact that the tool itself is light enough to be swung like a baseball bat with both hands at the far end of the handle. This man-handling of the tool increases the force and momentum generated over what would be possible with a standard flat-head by most people.



Sledge Technique

Again, note the ability of the firefighter pictured here (who is about 5 foot 9 inches and weighs about 160 lbs) to perform a full swing with both hands at the end of the handle. As if he were swinging a baseball bat.

The combination of the lighter head (5.5 lbs) and handle leads to an overall reduction in weight of one pound below a standard 6 lb flat-head axe mounted on a 36 inch fiberglass handle. This reduction in weight allows the tool, paradoxically, to generate more force than a slightly heavier tool because of the user's ability to swing it more efficiently.



Stutter-Step Technique



Stutter-Step Technique

While never my favorite technique using any tool, the Stutter-Step can be useful against residential doors or light commercial doors where there is not room to perform an arched swing with a sledge or axe.

We teach this technique in our classes using axes, sledges, and halligans. Because the tool is not swung in a 90+ degree arc, it is not as able to generate as much force, and must therefore rely more heavily on the weight of the tool in combination with the strength of the user.

Because of its lightness and the inability of this technique to compensate for lightness with the mechanical advantage of swinging, the Badaxx performed passably (about the same as a halligan bar does for this technique), but not as well as heavier tools such as a sledge or heavy axe.

And I am required by federal statute to add: *"CHECK THAT DOOR FOR HEAT, TIM?!"*



Baseball Bat Swing



Baseball Bat Swing



Frame-split tests

Baseball Bat Swing

BASEBALL BAT SWING, PART ONE:

The Badaxx, simply put, is the single best tool I've ever used to perform this technique, which is often used to split the frame and anchor a halligan for prying an inward-swinging residential door set into a wooden frame inward.

A halligan is most often used for this technique, but other tools such as the Pig or a standard pick-headed axe may also be used.



Baseball Bat Swing

BASEBALL BAT SWING, PART TWO:

The Badaxx is superior to the halligan for this technique because the head of the tool is heavier than the adz/pike end of the halligan, and it makes for good swinging and the ability to build a lot of momentum on the swing.

The pick is also perfectly shaped for this application. The pick is largish and squared, so it does a good job of splitting the frame. The pick is also *wider and flatter* than a standard pick-headed axe, so it anchors well into the frame. The down-turned angle of the pick creates a lever-like range of motion as the tool is pried on and the head contacts the door.



GAP-SET-FORCE



GAP-SET-FORCE

GSF, PART ONE: When performing conventional forcible entry, the Badaxx performed similarly to a 6 lb flat-head axe in many respects. The Badaxx really shines in long, full swings (taking full advantage of its overall weight and the arch of the handle). For short, punching strokes the head and handle weight feel very similar in striking power to a 6 lb flat-head. For those firefighters in FDs that are carrying 6 lb axes with their halligans, an irons-set set with the Badaxx as striking tool will feel very familiar in function to what they are used to.



GAP-SET-FORCE

GSF, PART TWO:

I had a lot of questions via facebook and email regarding the blunted blade for striking the halligan. The questions mostly focused on wanting to know if the head had a tendency to “roll” because of the tri-angled blade and the narrow flat front.

I can honestly say we had *no issues* with it rolling. So long as the tool was squarely struck, it struck firmly and well. If the tool was struck poorly or at a bad angle, it rolled to about the same degree that most other tools will. We explored this purposely in one of our further tests coming in the next few pages.



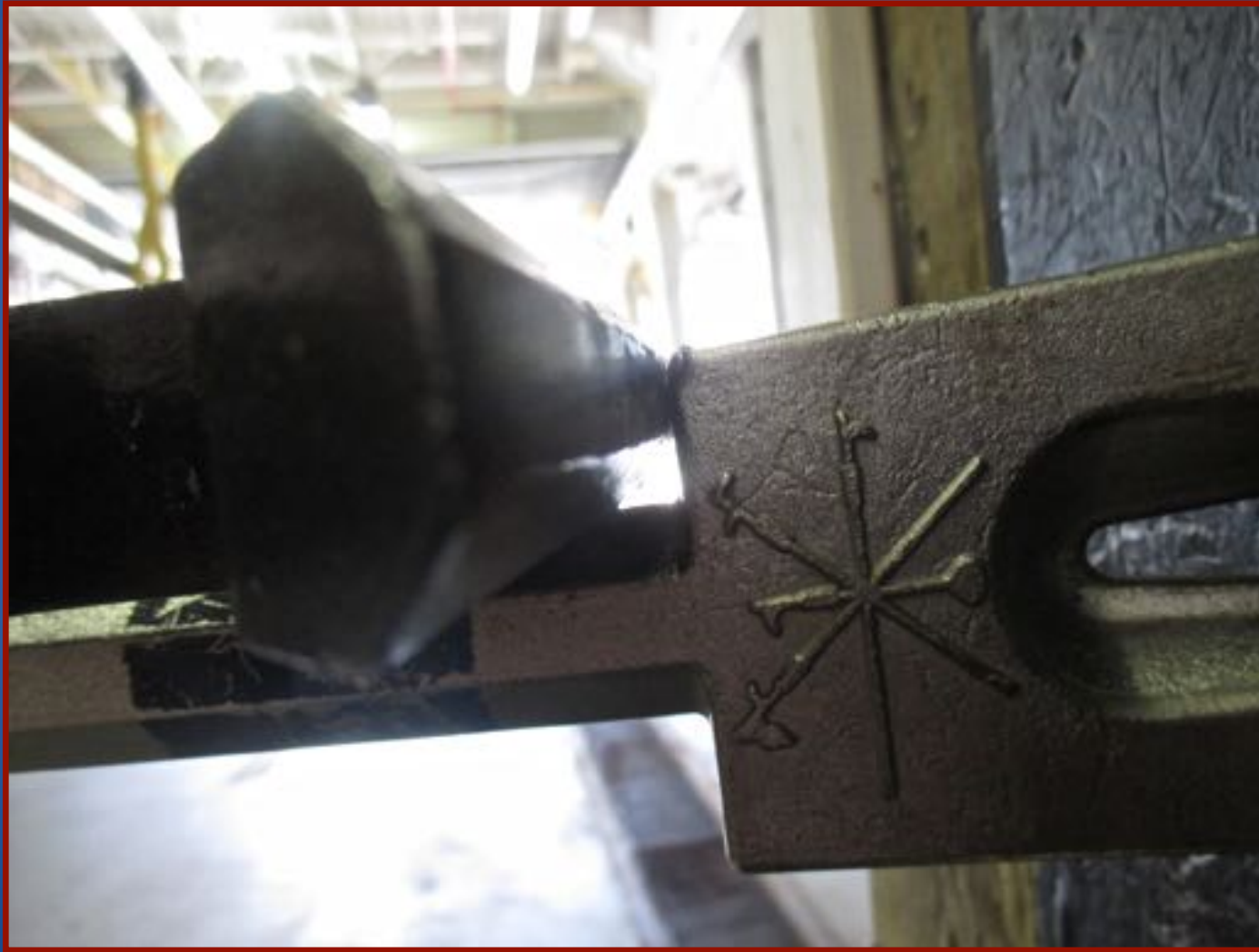
GAP-SET-FORCE

GSF, PART THREE:

The question I myself had was answered very quickly into GSF testing. I was wondering if the slight downward cant to the blade would interfere with trying to hit the halligan squarely. To be honest, I didn't even notice it at all. It was a non-issue.



Striking the Shoulders



Striking the Shoulders

STRIKING THE SHOULDERS, PART ONE:

Because of the narrow, blunted blade on the Badaxx, I've been asked this question a few times:

"Does the angle of the blade allow the halligan shoulders to be struck during one-FF operations or in close-quarters?"

It's a fair question, and one we put to the test. What we found was, that it really depends on the halligan bar being used. Specifically, the *shoulders* of the halligan.



Striking the Shoulders

STRIKING THE SHOULDERS, PART TWO:

The Pro Bar, from Fire Hooks Unlimited is widely considered to be the “gold standard” of halligan-type tools. Pictured below is an unaltered Pro Bar.

From the manufacturer, the shoulders of the Pro Bar are a bit sloped. Many tool-nerds file or grind down this area to create something akin to a 90-degree angle so that the striking tool can travel down the shaft and strike the shoulder of the fork squarely, thus setting the fork of the tool into the seam between door and frame.

Without doing this modification, the slope on the shoulders has a tendency to cause the striking tool to deflect up and away from the tool without transmitting much force to it. We’ve found this to be just as true for the Badaxx as with the back of a 6 lb or 8 lb flat-head axe.

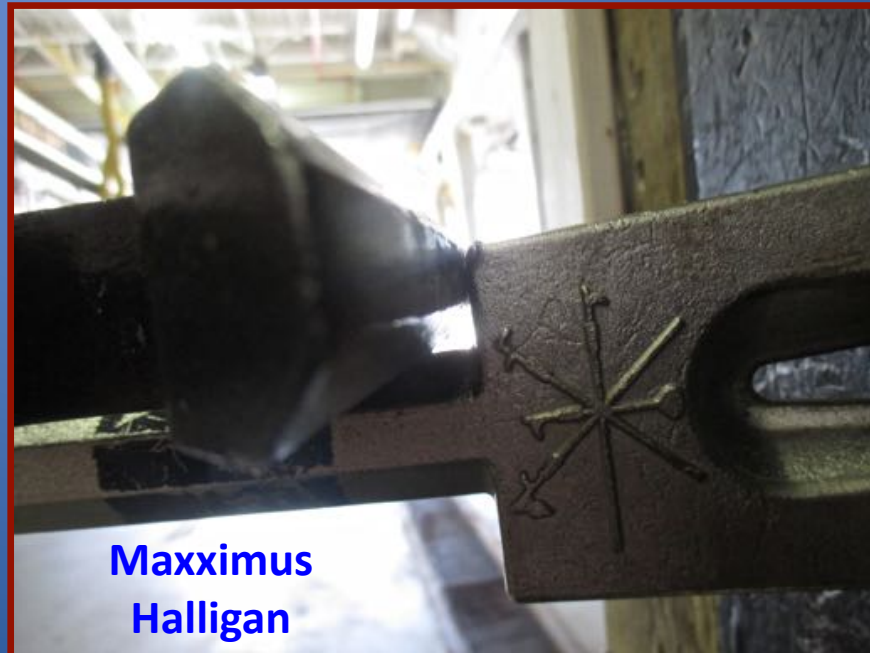


Striking the Shoulders

STRIKING THE SHOULDERS, PART THREE:

The Maxximus halligan (also from Fire Hooks Unlimited) is a newer model halligan that comes “pre-tuned” out of the box, complete with squared shoulders.

With the Maxximus—or with a Pro Bar that has had its shoulders squared—the flat angle of the Badaxx blade lands squarely on the fork shoulder and drives the tool in the same manner that a flat-head axe does, without the head of the axe deflecting off of the halligan.



Wedging

Because the Badaxx has no traditional “blade” and the pick is relatively thick, so—like the Pig and the Iron Fox Axe—it has little inherent wedging capability of its own. Making it difficult to widen a gap on an outward-swinging door or capture progress that the halligan is making.

This is easily remedied by the addition of an aluminum force wedge. This simple tool is light, inexpensive, easy to carry, and easy to use by one person. Depending upon the brand of force wedge, it can be married to the Badaxx or the through the spike of the halligan.

Shown here is the Fire Hooks Unlimited Force Wedge (\$15), a bungee-ball is included with each one for easy marrying.



Driving Carriage Bolts

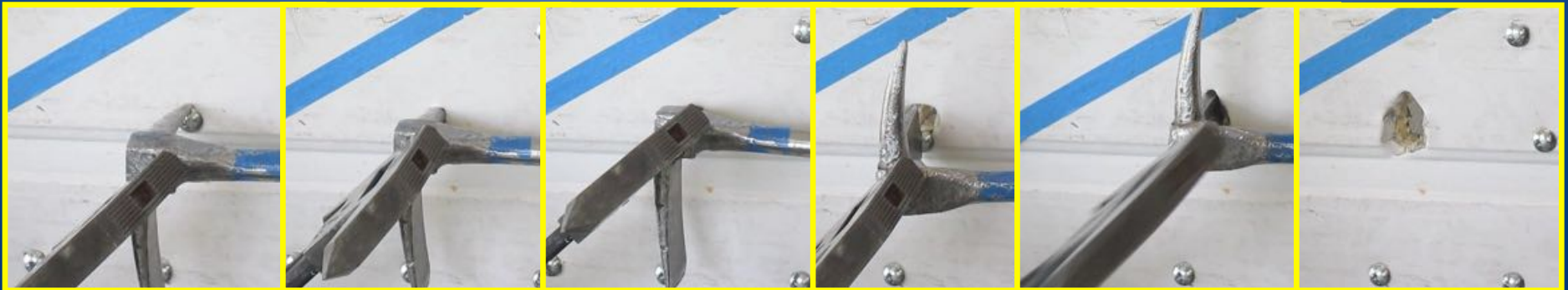


Driving Carriage Bolts

PART ONE: BADAXX AS DRIVER TOOL

This is a fairly standard forcible entry technique used for driving carriage bolt mounted drop-bars and sliding-bolts from the door. A channel is created parallel to the bolt using the spike of the halligan, which loosens the bolt in the door somewhat. Then the adz of the halligan is placed directly on the head of the bolt itself, and the bolt is driven through the door, removing it and any hardware on the interior side.

This technique allows the user to take more full swings, which means that the Badaxx performed far better than a standard 6 lb flat-head axe in delivering usable force to the halligan. This technique cannot be performed using a standard pick-head axe because a standard pick-head has no striking area other than the top of the head or flat of the blade, which is wildly inefficient by comparison.



Driving Carriage Bolts

PART TWO: BADAXX AS DRIVEN TOOL

If no halligan is immediately available, the pick of the Badaxx can be used to create the channel and then drive the carriage bolt through the door.

Because of the angle of the pick, aiming was slightly more difficult than with a halligan, but by no means hard to do.

Because of the “girthiness” of the pick, it took a few more swings to create the channel parallel to the carriage bolt. But once that channel was created, it was of such a large size that driving the bolt through the door took only one or two swings....so there was no wasted time or wasted effort.



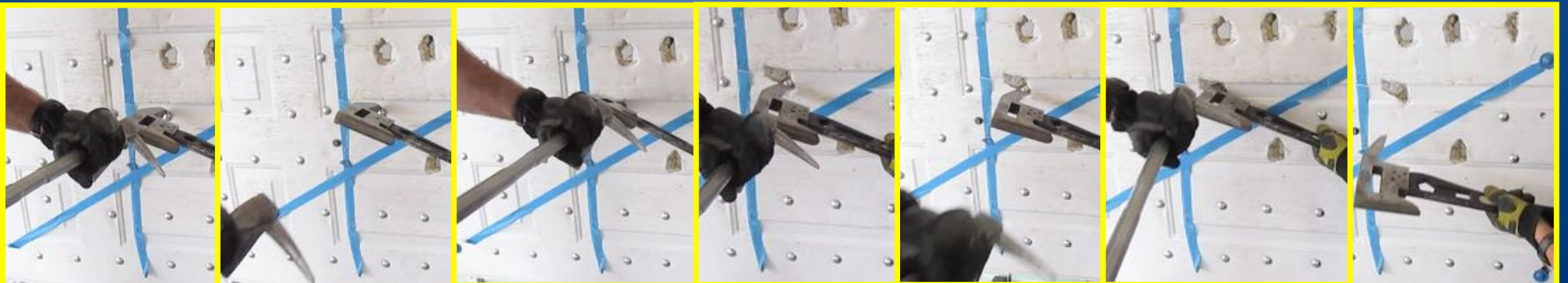
Driving Carriage Bolts

PART THREE: BADAXX AS DRIVEN TOOL, HALLIGAN AS DRIVER TOOL

This one was for sheer sport. I can't imagine anyone would do this on-scene given the availability of these same two tools, but after the success of the last test....we got curious about possibilities.

In this test, we used the pick of the Badaxx to create the channel and drive the carriage bolt, and the halligan in a stutter-step fashion to act as the driver tool to move the Badaxx.

It was more work for the halligan-man and took a little longer, but this technique clearly worked.



Driving Rim Locks



Driving Rim Locks

PART ONE: BADAXX AS DRIVER TOOL

During through-the-lock forcible entry on rim lock, occasionally the lock will have security features that prevent the latch mechanism from being manipulated. In that instance, the “Plan B” is to insert the spike of the halligan into the cylinder-hole and drive the lock from the door.

We choose to perform this test, not so much to test its striking power, but to test the Badaxx’s narrow and blunted blade. In order to drive the lock completely off the door, the halligan must make *constant minor adjustments* so that the spike is contacting the lock-body in specific ways to attack each screw holding it to the door. That being the case, halligan is a constantly shifting target....if the head of the Badaxx was going to “roll” in any way, now would have been the time it would’ve happened.



Driving Rim Locks

PART TWO: BADAXX AS DRIVER TOOL

I'm pleased to report that we had NO ISSUES with head-roll, so long as the tool was squarely struck. Constant minor shifting of position of the halligan required constant aiming and re-aiming of the Badaxx, which increases the likelihood of creating a situation where the two tools are not well-aligned.

In all our tests, we really had *no more incidences* of rolling of the head than we have had with other tools. The blunted blade is narrow, for sure, but plenty wide enough to provide a good striking surface AND concentrate all that force delivered into a small area for maximum efficiency and breaking power.



Driving Rim Locks

PART THREE: BADAXX AS DRIVEN TOOL

When performing a rim lock “Plan B” removal with a Rex Tool or K Tool, it’s very likely that a halligan is going to be immediately available. But should one NOT be, the pick of the Badaxx made short work of this REAL rim lock.

Unlike a traditional pick-head axe, the blade of the Badaxx can be struck with another tool, turning the pick into a driven tool.



Breaching Walls

We breached one residential masonry block wall with the Badaxx. Unfortunately, I did it by myself one morning before shift and didn't have my camera on me so I was not able to get any video.

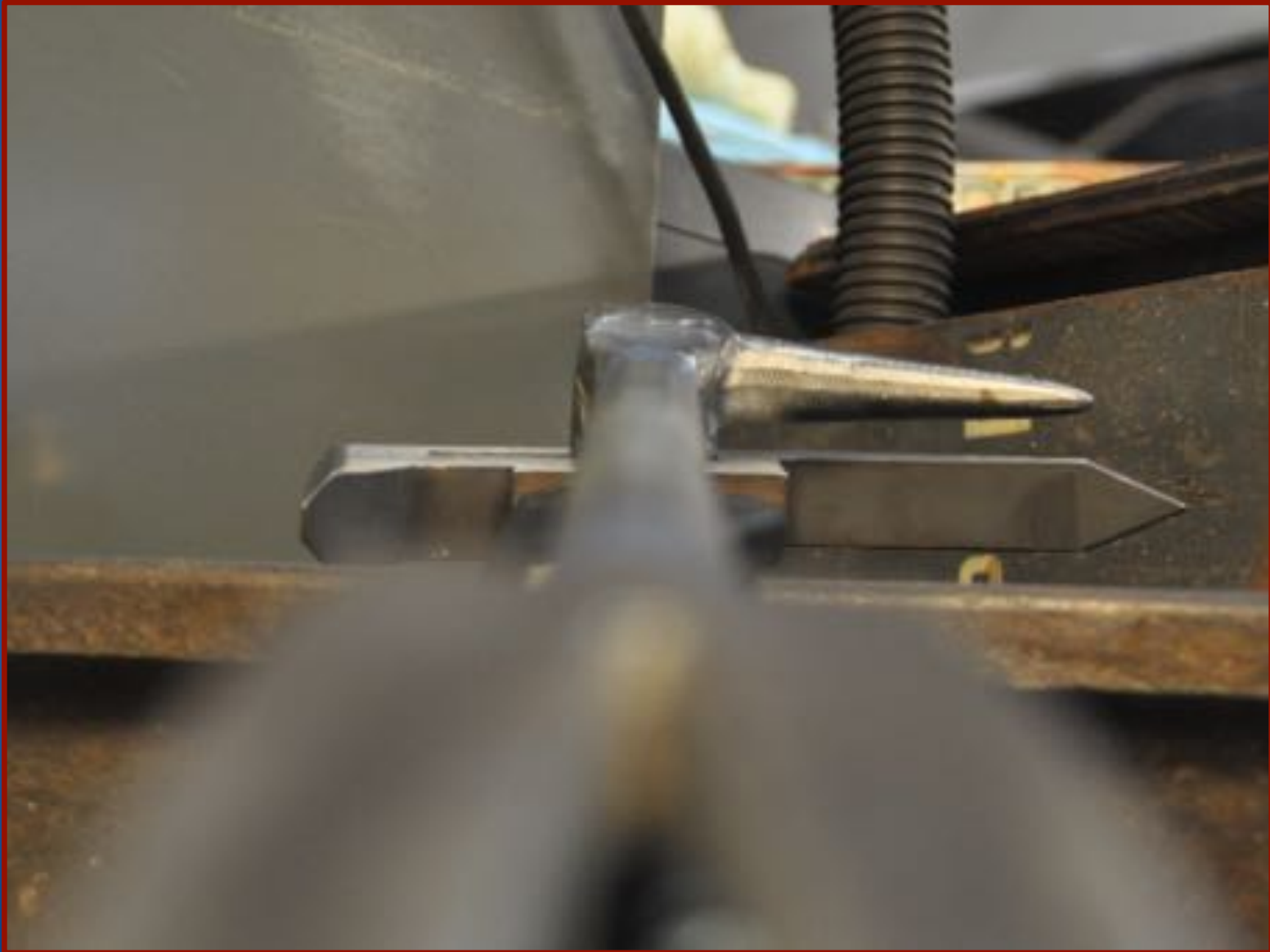
For this kind of heavy-duty bludgeoning work, obviously a 10 lb sledge hammer is more in line. But the Badaxx performed *very well* for its weight class. Better than a standard 6 lb flat-head, *and* with the added bonus of a pick that you can pierce the cavities of the block with, weakening the block before destroying the rest of it.



PART FIVE: Marriage



Marriage



Marriage



Marriage

PART ONE: OVERVIEW

The slot in the head is makes marriage to the halligan quick and easy. The tools can be carried in one hand, or carried shotgun-style tucked under the armpit with the head/adz side toward the front and the adz facing up.

The halligan can be oriented with the spike on the same side as the Badaxx pick, or opposite it.



Marriage

PART TWO: HEAD SLOT

The head slot is wide enough (3-1/8 inches) to fit any commercially-available halligan on the market today, including the wide-adz bars that are made by Fire Hooks Unlimited and Aazel.

The slot is also tall enough to accept the awful “high-arch” bars that are currently being made by Akron Brass, Council Tool, and Leatherhead.



Marriage

PART THREE: BALANCE AS A SET

Unlike most striking tools, the adz of the tool is connected head-to-adz, rather than head-to-fork. With both of the heaviest ends of each tool oriented at the same end of the married set, it changes the balance when carried.

Some people may not care for this change, but I, for one, like how “predictable” it made the set when carried in my hand or hands. If tilted or tipped heavy-side down, the set tends to want to remain that way....rather than bobbing any which way because the balance is less weighted at one end.



Marriage

PART FOUR: CARRYING STRAP

Like anything, this accessory is all about personal preference. If you don't like carrying your irons on a sling, you're not going to like this sling. If you like carrying your irons on a sling, you're going to LOVE this sling.

I've never been fond of shoulder-slings for the irons, so I'm definitely a little biased. I prefer to have the tools close enough together to hold one or both in one of my hands, rather than on my shoulder, slopping around, and needing to be constantly fixed and put back on my shoulder. If I were to have any strap at all, I personally would have a simple nylon strap that velcros together or has a quick-release buckle, that would simply hold the two tools together around the shaft so I could easily carry them in one hand.

But the carrying strap sold as an accessory for the Badaxx is a simple design that holds the tools tightly together, and is quickly assembled and disassembled. It balances well on the shoulder without a lot of shifting because the strap doesn't connect the very top and very bottom of the tool-set like most slings, but connects just below the head and at the mid-point of the shaft.



PART SIX: Other Uses



Use as a Hydrant Wrench

PART ONE:

My only complaint with the Badaxx is with this function...really it's not so much a complaint as it is jealousy. It is a great idea to add this to the handle, especially when they were looking at doing some cut-outs to reduce weight anyway.

The down-side of it is that no matter what size you make the cut-outs for the operating stem nut, they are going to work in some areas....and not in others. Different hydrant manufacturers use different sizes, and that's all there is to it. Even in cities close to one another, the Badaxx may work on one side of the border, and not work across the street on the other side. That's not anyone's fault, that's just how life works! It's why all stand-alone hydrant wrenches are adjustable....because there are so many different sizes.



Photo by Korey Maves

Use as a Hydrant Wrench

PART TWO:

For instance, my wife is a career firefighter and the Badaxx fit like a glove on the hydrants in her city....but the pentagonal opening is too big for the hydrants in my own city not ten miles away. The picture below is from my wife's city, taken during training.

I've suggested to Scott McCann, the inventor, that they consider some type of insert that could be snapped, screwed, or perhaps even welded into place that would fit common hydrant manufacturers various sizes. They are looking into that for the not-too-distant future.



Use as a Gas/Water Valve Shut-Off

Like any multi-tool worth its salt, there is a gas valve shut-off built into the top of the head. As with other tools that offer this function, its size will work with some valves and not with others. Usually this will vary with the age of the structure and the relative vintage of the gas valve.

I'm not sure I'd grab the Badaxx as the very first tool off of the truck if my express purpose was to shut off a gas or water valve, but if I had a need to do so and was carrying my Badaxx in my hand or on my belt, it would be convenient to use it for this purpose.



Use as a Step

The top of the head was designed to be used as step during either rooftop ventilation or VEIS operations, and is knurled to provide better traction to do so.

Again, the wide and flat shape of the pick and its slight downward angle make for exceptional “biting and holding” when sunk into walls or roof decking.

It can also be used as a “survival step” by a firefighter trapped in a basement by leaning it against a wall or in a corner and stepping on the head to reach a basement window.



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Use as a Door-Chock

Credit to my partner in crime, Matt McEveney, for this one.

The Badaxx can be used, if desired, as an over-the-hinge door-chock simply by placing the beard of the blade over any one of the door hinges.

Certainly during active extinguishment one would not want to sacrifice his or her tool, but after knockdown and during overhaul this might be done out of convenience to keep a door open.



Reflective Tape

I don't know if they're going to make this a regular offering or not, but on the unit that Scott gave us to test he had cut down some reflective tape and put it into the recessed portions of the handle. I really like it. It's a great idea, and it doesn't change the grip at all.



PART SEVEN:

Last Thoughts & Summary of Findings



PROs

PROs:

- Entire tool is “bailout ready”.
- Two ways to attach the head to a building for bailout (versus one for a standard pick-head).
- Three attachment points on the handle for attaching a carabiner and/or rope for bailout.
- One pound lighter overall than a standard pick-head axe.
- Light weight makes for a good interior search tool.
- Overall length (34 inches) is two inches shorter than a standard pick-head, which makes it easier to carry mounted to a belt/SCBA waist-strap.
- Handle shape/weight helps the tool to generate more force and hit harder than the same head on a standard handle.
- Hydrant wrench fittings built into the handle.
- Easy marriage to a halligan, and easy carry as an irons-set.
- Slender, blunted “blade” makes for focused striking force, which works exceptionally well for roof ventilation.
- By far, the best pick on any tool we’ve ever used. Wide and flat and angled for hooking materials, it’s the best design we’ve seen on a fire service pick or pike.

CONs

CONs:

- Cost.
- Hydrant wrench fittings may not fit hydrants in all areas.
- Lack of a true “blade” requires the addition of a Force Wedge to be carried for gapping and capturing the purchase on doors if this tool is used as part of an irons-set.
- Handle is electrically-conductive. This is a minor point for us, because the same could be said for the all-metal Roof Hook, a wet fiberglass or wooden axe handle, or for a user who is soaked with water from a hose-line or standing in water.

Comparisons to the PIG

I've been asked to make this comparison dozens of times now. I find it a difficult comparison to make, because they are really *very different* tools that will appeal to different types of users.

If you are looking for a heavier tool that excels at smashing roofs and doors through brute force, you're likely going to gravitate toward the Pig.

If you're looking for a general purpose tool, that's light enough for easy carry on the interior, can be man-handled into swinging hard and fast, and has a strong emphasis on firefighter survival, then you're probably going to be more interested in the Badaxx.

Both are *fantastic* tools, and it's up to the end-user to decide for themselves what their weight-preference and intended uses are.



Comparisons to the Standard Pick-Head

This comparison is MUCH easier to make. As far as I'm concerned, the Badaxx is a superior tool to the standard 6 lb pick-head axe in every way. I was asked to write an article recently on "The Death Knell of the Pick-headed Axe". Tools like the Badaxx are why the standard pick-head is falling quickly from favor.

The Badaxx is a pound lighter overall, it hits harder, it can be used as a striking tool, and the dimensions of the pick are far more effective.....not to mention all the bailout functions.



The Handle

HANDLE CIRCUMFERENCE:

The handle of the Badaxx is flatter than the average fiberglass handle. It is flat more than oval. I happen to really like this shape for a handle. I have pretty average-sized hands (my glove size is medium), and I like how this handle feels. In the course of our tests some people have agreed with me, others have disagreed.

Out of curiosity, I measured the circumference of both the Badaxx handle, and that of a standard Nupla-brand fiberglass handle currently in use by Fire Hooks Unlimited, Lonestar Axe (makers of the Pig), and Fire Axe Inc. Though slightly different shapes, they are the exact same circumference: 4-1/2 inches.



Good, Good, Good, Good Vibrations

One of the questions I've gotten from several people is about the handle, and if there are any vibrations through it when striking. I can honestly say that in ALL of our forcible entry, roof ventilation, and bailout tests I didn't notice any vibrations at all. In fact, in some of the FE tests I wasn't even wearing gloves (below picture).

The one and only time I felt *any* vibration at all was breaching a block wall. I felt some vibration in the handle through light work-gloves, but not enough to cause me any real discomfort or to stop me from making an egress hole all by myself. And really....how often are you going to be doing that? And it wasn't bad enough to cause any real discomfort or slow me down anyway.

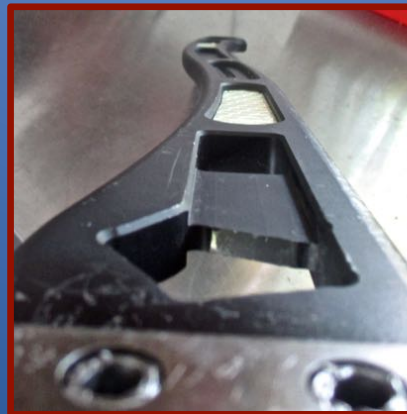


Durability & Maintenance

PART ONE: THE HANDLE

Any tool can be damaged or destroyed by misuse and lack of care, but with reasonable use and maintenance, the Badaxx should be considered an heirloom tool that can be used throughout an entire firefighter's career, then passed to the next generation.

The handle is a strong aluminum alloy, so it's not subject to rust. Any painting the user might do to it over the years to cover minor scratches, will be purely cosmetic. Unless loaded or shocked laterally to the extreme, it's unlikely that the handle will be damaged. The beard of the blade offers a moderate amount of protection from overstrikes. Any gouges or burrs can be ground down easily on a bench-grinder, then wire-wheeled until smooth.



Durability & Maintenance

PART TWO: THE HEAD

The head itself comes unpainted from the manufacturer. Like the Pig, if used in this condition and not cleaned, the surface of the head will rust. Spray-painting the head with clear-coat Rustoleum (or any color, for that matter), or covering the head with canuba wax will protect the head from undue exposure to oxidizing elements in the air and moisture.

This will need to be done periodically by the user.



Cost



PART ONE:

Like all of the “premium” axes on the market, the Badaxx is NOT cheap. And to a fire service that’s grown unaccustomed to purchasing its own gear and tools, that’s a deterrent to sales.

Again, taking the historical perspective the way I often do, I return you momentarily to the Old West. In order to get a job driving cattle, a cattle-driver (“cowboy” was a pejorative term often used as an insult), was expected to furnish and maintain his or her own pistol, rifle, knife, saddle, boots, and spurs. That kind of thing is still true in many trades around the world today.

I fault NO FIREFIGHTER for expecting his or her employer to provide PPE or tools. They are required to, and they should be required to. But fiscal realities being what they are, it may be unlikely that an employer is going to furnish to your specific tastes. If you’ve got a hankering for THE BEST, you may have to procure it yourself....either that or else start your campaign with the chief to loosen the purse-strings!

Cost



PART TWO:

I always have bought better gear and tools than what my department issued me or provided for my use. Why? I dunno....I like what I do for a living, I guess. And I'd rather take a ribbing in the firehouse for owning my own axe, than take a beating at a fire for having the turnouts with the emptiest pockets.

A tool like the Badaxx or a good halligan, if properly used and cared for, will bring a lifetime of faithful and skillful use to its owner. Personally, I see that as an investment in one's trade. The more a firefighter handles a personal tool, even just to move it from locker to truck and back again at the start and end of each shift, the more that firefighter becomes comfortable with that tool....and it becomes an extension of himself or herself.

Lastly, I find it the height of hilarity for someone who's wearing a leather helmet to complain about the cost of a tool! I wear a leather helmet too, and I'll be buying a new one in the next couple years when I get promoted. But let's face it....there isn't *any good, practical reason* to wear a leather helmet! We just LIKE them! On the other hand, there are many good, practical reasons to invest in hand-tools of obvious quality.

Summary of Findings 1

Our own tool philosophy has always been this:

If an individual firefighter likes a particular tool and can use it to good effect, then they have the right to do so without being insulted or critiqued.

There are certainly many great tools and tool combinations, and we would never presume to tell you what you like. We've always tried to incorporate a wide variety of tools into our classes so that individual firefighters can try tools they may only have seen pictures of online or in catalogs. They may learn that they have a personal preference for one tool or another, or discover that one type of tool would work best for the way their department runs. Such is the benefit of practice, which is the point of our training classes.

This report reflects our own findings and our own opinions, which were honestly come by, and honestly expressed here. Upon exploration and use, your own preferences may lie with another tool, or you may come to see what we see in the Badaxx. Either way is fine with us.

We're not trying to tell you to throw away your standard pick-head, or trying to sell you anything, we merely want to share what we've learned.

Summary of Findings 2

My partner in these tests, Matt McEveney, was the first person to bring the tool to the attention of S&D T&T. We then followed the Badaxx through its development and Kickstarter campaign to raise money for production. When Scott McCann contacted us prior to FDIC this year, we were very excited to help out with beta-testing the first generation. It's an honor to help a fireman who has pushed the science of fire suppression and the art of tool craftsmanship forward.

Since the moment we picked up the Badaxx directly from Scott at his booth at FDIC, we've been asked about it non-stop. Walking around FDIC, it was: *"What the hell is that??...That thing looks awesome!...What's it called?...Did you buy that here?...Who's selling them??"*

Since we got back home and started posting pictures and videos of the tests we've been conducting, the questions soon came from people who'd ALSO been following the Badaxx's journey online. Those questions were mostly, *"Is it as cool as it looks?...Does it do what they say it can do?...Are they going to be shipping MINE soon??"*

I have tried my best to elaborate here, ad nauseam at times, but the answer is: *Yes, it does what they say it can do.*

Summary of Findings 3

Unlike any other full-size tool that I know of, the Badaxx's primary focus is firefighter survival. Any full-size tool that we can carry on the fireground that can make a emergency bailout quicker and easier to perform is worth my time to explore and consider for my own use.

Completely aside from its bailout capabilities, the Badaxx is also an incredible general purpose tool that can be used well for most cutting, chopping, and blunt-striking functions on the fireground....to include forcible entry, rooftop ventilation, search & rescue, and overhaul.

Make no mistake, personal preference will always be king at **S&D T&T**, and you may prefer a different tool for one specific task or another, but the Badaxx performed at solidly at every task we set before it....and it EXCELLED at a good number of those tasks. It got a passing grade for everything we did with it, and HIGH MARKS for most of those things.



Summary of Findings 4

So again, a firefighter may prefer another tool for this, that, or the other....but *none* can say that you can't do this, that, or the other with the Badaxx. It passed ALL our tests, and passed most with flying colors.

For those die-hard truckie types who ONLY want a ten-pound sledge at the door or an eight-pound Pig up on the roof, they may find the Badaxx feels too light for their own preference. And that's fine. But not everyone feels that way....as is evidenced by the buzz surrounding the upcoming release of the new six-pound Piglet tool.

For those happy with the weight of the six-pound axes they've been using their entire career, or for those pipemen who make entry on the nozzle, many will want a tool that's a pound lighter and *hits harder* than the standard pick-head they're used to carrying in for initial attack or doing a primary search.

I think given the weight of such a versatile full-size tool, it's a amazing tool for inside work.

Summary of Findings 5

The owners of **S&D T&T** have no financial stake in whether or not a single Badaxx is sold. We don't currently sell the tools ourselves, nor did we create it. We won't see a nickel.

We were not compensated for our work during the testing process, beyond receiving a free prototype of the tool which we get to keep now that our testing is complete. And given the man-hours we've put into testing, photographing, shooting video, editing video, and writing this report....I'd say our rate of pay would be down about a dollar an hour when considering the retail value of the tool!

We jumped at the chance. It was a labor of love, and an extremely enjoyable experience. It furthered our own education in our trade, and made us appreciate—as always—that there is still more to learn.



S&D T&T ENDORSEMENT

Here is the highest endorsement we can give to any tool:

At the conclusion of testing, we opted to buy—at full price—a second Badaxx for our own use and for use in our training classes. We put our money where our mouth is.



For More Information:

Watch all test videos covering all manor of tests we did on the Badaxx on Youtube, and check out all our pictures of the tool itself on our facebook page.

Youtube channel-name: SearchAndDestroyFire

Facebook page: www.facebook.com/SearchAndDestroyTrainingAndTools

Email: SearchAndDestroyFE@me.com



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KEEP YOUR FRIENDS CLOSE,
AND YOUR TOOLS CLOSER.

