

WAUCONDA FIRE DISTRICT  
Training Division

**Back to Basics: Uses for Irons**

Every new firefighter should be a master of the “irons.” We use two types, depending on building construction: a residential set, consisting of a flathead ax, preferably an eight-pound, and a 30-inch halligan bar, and a commercial set, consisting of a 10-pound sledgehammer and a 30-inch halligan bar.

Be familiar with your halligan bar; know how to use the adz, pick, and fork and how to apply pressure properly. Keep the tools sharp, clean, and ready. Make sure the edge on your ax is always ready for cutting. You may want to customize your sledgehammer to accommodate the halligan bar: Weld a six-inch piece of flat bar steel forged into a keeper, just large enough to hold the adz end of the halligan bar, onto the top of the sledgehammer.

**TOP 25 USES**

How many uses can you think of for the irons? Here is my “top 25” list.

**1. Forcible Entry:** Take forcible entry a step further; apply it to inward- and outward-swinging doors. Different methods of applying force are used for each, depending on smoke conditions.

*Fork and adz methods for outward- and inward-swinging doors.* For an outward-swinging door, place the concave side of the fork toward the door. Drive the tool between the door and the jamb. Avoid penetrating the jamb. When the tool has spread the door as far as it will go, force the adz end of the halligan bar away from the door.

Another method is to place the adz end of the halligan bar six inches above or below the lock and drive it in the space between the door and the jamb. Try not to split the jamb’s doorstep. Pry down and out with the fork end of the halligan bar. Sometimes, you have to pry outward to release a slide bolt.

*Inward-swinging door.* Place the fork end of the halligan bar six inches above or below the lock with the bevel side of the fork touching the door. Tilt the halligan toward the ground (so the firefighter striking the tool doesn’t need to stand up and he’s out of the smoke), and strike the end of the halligan with the flathead ax. Drive the fork of the halligan past the interior doorjamb. Once you have attained this position, apply pressure on the halligan toward the door, forcing it open. If you meet resistance while driving the halligan with the ax, turn the bar so that the bevel side of the fork is against the doorjamb. (This method works well with steel-framed doors; it prevents the fork from penetrating into the metal jamb.) Drive the halligan in, and force the door. If additional leverage is needed, place the head of the ax between the door and the fork of the halligan bar. This will fill in the gap between the door and the fork of the halligan bar.

You can also drive the pick end of the halligan bar into the doorjamb six inches above or below the lock; apply downward pressure, and push the top of the adz against the door. When you pry downward, the adz isn’t fully hitting the door. Pulling the tool toward the door often splits the wood door frame and releases the locks. Pushing the tool upward lets the adz have contact the whole time and assists in forcing the door.

Remember to control the door; use the adz end to reach and grab the bottom of the door. Don’t let it spring open, exposing you and your crew to fire and heat before you are ready.

**2. Remove a Padlock:** *The pick method:* Place the pick of the halligan between the shackle and the lock body, then strike the opposite end of the adz with the flathead ax .



*The fork method:* Place the shackle of the lock between the forks of the halligan; strike the outer edge of the fork with the flathead ax. Or, for cheap locks, try to twist the lock and snap the shackle.



**3. Remove the Hinge Pins:** (outward-swinging door). Use the blade of the ax to make an access point with the head of the pin. Tap the back of the ax with the halligan. As the pin loosens, adjust the blade of the ax at an angle to force the pin up and out.

**4. Remove the Entire Door** (usually interior doors; also works great for those annoying screen doors on the front porch). Slam the door while the ax head rests between the hinge side of the door and the doorframe. This will pull the hinges out of the doorjamb. There may be some problems with this method if you encounter top and bottom hydraulic cylinders on screen doors.



**5. Cut off Bolt Heads with the Adz:** (rear commercial doors or barred windows). Use the adz of your halligan between the bolt and the wall. Strike the back of the halligan with the back of the ax head.



**6. Pry a Double-Hung Window:** Place the fork end of the halligan at the bottom of the window; push down on the bar, creating pressure on the sash lock, which will either pull the screws out or break the lock mechanism.

**7. Heel a Ladder for those not-so-perfect Climbing Angles:** We all know that the perfect climbing angle of a ground ladder is between 70° and 75°. At times we cannot get that perfect angle, so we improvise. When adequate personnel are not available, get an adequate anchor point to heel the ladder—in our case, a halligan bar—then we are compliant. First, place the pick end of the halligan bar into the ground, then step on it to hold the butt of the ladder.



*Method 2:* Drive the fork end into the ground with the adz holding the rung of the ladder.

*Note:*The ground must be soft for these methods. They will not work on concrete and asphalt! (Also, I'm not a big fan of giving up a tool you may need when you get to the top of the ladder.)

**8. Level a Ladder on Uneven Terrain:** (waste of a good tool unless you are an engine guy). At times you will find that your ladder is not level with the terrain. You can use a halligan bar to level your ladder. This can work on hard and soft ground. An alternate method for soft ground is to dig out the hill to allow the butt of the ladder to sit level.

**9. Secure a Ladder at the Tip:** Place a girth hitch around the rung nearest the window opening with a piece of webbing or a hose strap. Place the halligan bar between the loop at the opposite end of the girth. Twist the webbing or strap (like a tourniquet) until the tool wedges itself at an angle in the window (again, you are giving up a tool that you may need to use).



**10. Clear out a Window:** (for ventilation or possible egress). This method is self-explanatory. Clear out the entire window (glass, frame, and window treatments). Leave nothing but a large opening.

**11. Ventilate Upper Floor:** (when the ladders cannot be used). A small strategically placed ring welded near the fork end will provide an attachment point for a carabineer or rope to tie off the halligan bar. Measure the distance from the floor above to the window you wish to break. Hold on tight, and throw the halligan bar out the upper-floor window; this will create a pendulum effect that will swing the bar into the window below. It may take a couple of times to break out the entire window. If you don't have a welded ring, you can tie the tool with a knot.

**12. Vent a Roof with Hand Tools:** (ax or sledgehammer). Firefighters must be proficient in using hand tools in case power tools cannot be used (heavy smoke conditions or the roof is too steeply pitched, for example). Consider using your eight-pound ax or 10-pound sledgehammer to break through the roof. Hand tools will always start.

**13. Provide Foot Support on a Roof:** (many roofs are much longer than the roof ladder). Drive the pick end of the halligan into the roof with the fork pointing toward the gutters.

**14. Overhaul Door / Window Frames:** The halligan bar affords the firefighter great leverage for easily removing door and window framing.

**15. Breach / Overhaul a Wall:** (block and wood). A 10-pound sledgehammer will make the masonry job much easier. Remember, concrete blocks have a breaker in the center and are difficult to breach; keep to the left of right of the center. In gypsum board or lath and plaster walls, start by making a small hole with the fork end, place the bar into the hole, and pull out an entire section. You can take out the rest of the wall by using the adz or ax as a battering ram.

**16. Shut Off Utilities:** Place the fork end of the halligan bar into the meter valve and turn the valve until it is in the off position; normally a quarter turn is all that is needed. The valve is pinched between the forks of the halligan.

**17. Remove Water: (floor drain).** Use the pick end of the halligan to create a hole in the floor. You may need to use the adz end to keep debris out of the hole so that it will drain properly. Hopefully, this excess water will go into the crawl space and not the first-floor apartment.





**18. Hold up an Overhead Roll-up Door:** This is self-explanatory. Wedge the pick into the track with the fork down, letting the bottom of the door rest on the top of the adz.

**19. Step-up Assistance:** (for vertically challenged firefighters). This works well when you cannot quite get into an opening. Place the front of the adz end of the halligan bar down and point toward the building, creating a step.

**20. Lift a Manhole Cover:** Strike the top of the manhole with the adz end all around the top of the cover, to loosen any dirt or debris. Place the pick end of the halligan into the hole, and lift.

**21. Make a Purchase Point in a Car Door (vehicle extrication):** Place the adz end of the halligan in the space between the doors; strike the back of the adz with the flathead ax to get the tool into the door. Pry up and down to make a purchase point big enough to get the hydraulic tool into the door.

**22. Access the Hood through the Headlight (car fires):** I have encountered times when the fire under the hood was well involved and burned through the hood release. In some vehicles, you can gain access under the hood through the headlight. Use the fork end of the halligan bar, break out the headlight, and push through until you see fire. Then let the engine firefighter put water on it.



Method 2: Create a perforation at a diagonal on the hood with the adz end; then drive the pick into the corner you created and pull, exposing what is underneath the hood so water can be applied.



**23. Remove a Downed Victim / Firefighter:** (Note: The 30-inch bar will fit through most doorways). If one of your fellow firefighters should fall, requiring a quick removal, hook the belly strap on the SCBA between the legs, then slide the halligan bar on the back side of the SCBA straps. Lift and pull the downed firefighter to an area of safe refuge. The same method can be used for civilians; however, you will need a hose strap or webbing to act as the SCBA harness.



**24. Self-Rescue.** If you need to evacuate an upper floor when the fire wasn't extinguished in a timely manner, drive the halligan bar into the wall at a diagonal, wedging the bar across the window opening. Place a carabineer or a quick knot of choice on the center of the bar and evacuate the room. A small strategically placed ring welded near the fork end can also add to this self-rescue. Drive the pick end of the halligan bar into a wooden floor, or use a door you removed as your anchor point, and evacuate through the window.



**25. Self-Defense:** This is not a technique you really want to use, but self-preservation will usually kick in, and you will play it by ear.

These are not all the methods; there are plenty more. How long of a list can you make? Challenge yourself and your crews. This is only the first step in getting back to basics. Share what you know with others; if you don't know or understand, find someone who knows and understands. Have that person teach you. This is the only way we can preserve our great profession for the next generations.

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