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The NY Roof Hook: Topsiside, Outside, and Inside

There is a distinct difference between using tools and understanding them. An intimate knowledge of our craft and tools separates those who “just get the job done” from the force multipliers. While there are no shortages of examples of this in our profession, for this piece we have decided to focus upon the New York Roof Hook.

The New York Roof Hook was invented by FDNY Deputy Chief Hugh Halligan, the same man that gave us the Halligan bar in the 1940s. Chief Halligan followed up in the 1950s with the Halligan Hook. The Halligan Hook is most commonly referred to today as the New York Roof Hook, the name it is sold under by Fire Hooks Unlimited. The design of this tool has been refined over years of service with an attention to detail that can only be found in the hearts and souls of those performing the work.


Topside



The New York Roof Hook is a force multiplier. Every pitch and facet of this tool has purpose. It is a forged fulcrum designed to maximize the energy you deliver in your roof duties. This is not a pike pole; it is a pry tool.



This is a pike pole designed for pulling material.

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This is a fulcrum designed to multiply forces applied and pry material.



In looking at the design of the NY Roof Hook fulcrum from the tip down, you will notice that the underside of the tip is a straight 90 degrees from the shaft and off-set from the lever (lower hook). The purpose of the upper hook is to capture the load. When put to work in the decking the tip sets under the cut roof decking while the lever remains on a structural member or intact decking.



Beyond the hook-and-lever design of the fulcrum this tool features a 45 degree bevel off of the tip which serves two purposes. The first is to assist in plunging through kerfs, the second is to work at an angle along a structural member as if it was a can opener. This

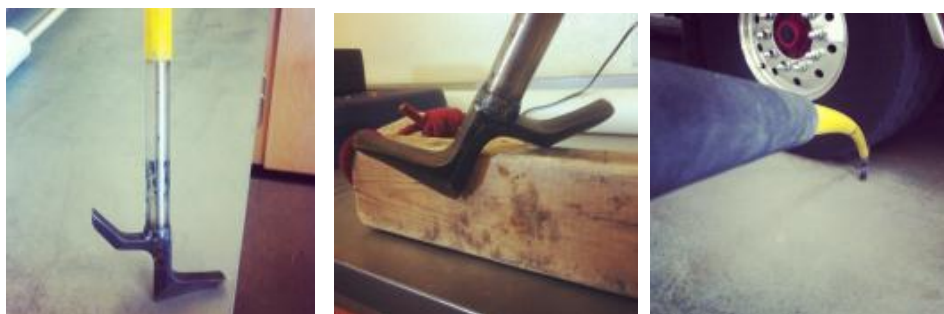
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These two facets place the tool directly into the position that they need to be to get under the tin or frame of an existing opening. With the long lever of the steel shaft the nose is just enough of a fulcrum to pop the material back. From that position, in a can opener manner, you can work your way around the opening, failing set screws and the covering.

On the topside the steel New York Roof Hook is a force multiplier. Because of its incredible performance and deep adoration the true craftsmen have for it other vendors attempt to imitate or replicate.

Vendors often create a product for a use, not from an understanding. When they attempt to make things “lightweight” and “multi-purpose” there is compromise. Stop letting a guy who runs 20 tradeshow a year dictate what you use on 20 fires a year for the next 20 years! Salesmen are professionals in selling, they are polished in explaining the “benefits” of their products and ideas and they are quite convincing. Our only way to battle this cancer is to trump the understanding of the product with our knowledge of duty so you can separate loss leaders from the force multipliers.



This is an imitation. This is an attempt at combining a roof hook and a pike pole, making it lightweight and multipurpose. Craftsmanship is compromised in the multiple materials, the fulcrum is compromised through lack of understanding of purpose, and valuable energy is lost in the flex of the shaft because the manufacturer never thought you would try to pry with something that is supposed to be used to pull material .

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Outside


Just because this particular tool carries the common name “Roof Hook” does not mean that its sole application is rooftop operations. When combined with the Halligan Bar the Roof Hook becomes an excellent forcible entry tool. For the OVM (Outside Ventilation Man), the New York Roof Hook is an essential implement. Assignments can vary widely; Horizontal Ventilation, Vent-Enter-Search, C-Side Forcible Entry, and “Softening the Building.” The versatility of the New York Roof Hook makes it a force multiplier for the outside.



Marrying the Roof Hook with the Halligan Bar is a must for anyone performing exterior operations on the fire building. By marrying the tools together, the firefighter can then carry the two together with a single hand, freeing the other to carry a ground ladder, T.I.C., saw, or any other tool the situation may call for. To marry the Roof Hook and Halligan, place the Adz of the Halligan Bar over the lower prying end of the Roof Hook. The forks of the Halligan will ride against the shaft of the Roof Hook and a firm grip in the center of the Halligan will keep the tools locked together. You can go a step further and weld a single link of chain on the Roof Hook at the point where the fork of the Halligan sits, giving a firmer seat to keep the tools secured together.

The Roof Hook shows its superiority above all other hooks when used for horizontal ventilation. When taking windows for ventilation it is important to completely clear the opening so that ventilation is maximized and the opening can be used as an emergency egress for firefighters. Hooks constructed with a fiberglass handle are adequate for taking out the glass, but when we proceed to clear the sash and other construction features built into the window we are forced to switch to a tool with a more rigid design. The Roof Hook has the length to reach most panes of glass. The added bonus of its heavy steel construction is that it has the backbone to break the sash of most windows. Fiberglass tools have the tendency to bounce off the sash (or worse, splinter and break the tool shaft). When married with the Halligan Bar, there are very few windows the OVM cannot ventilate and clear with little effort.

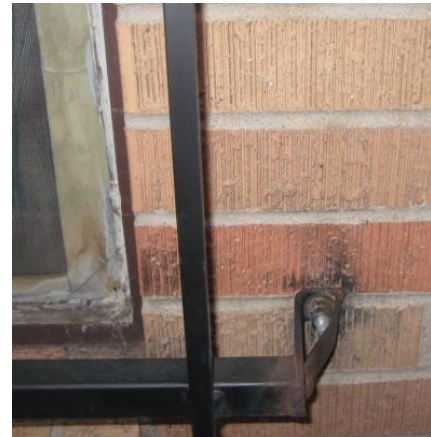
When fighting fires in structures equipped with additional security features such as window bars or security mesh, or vacant structures that are boarded up, it is critical that the added features are quickly removed. Steel bars will likely not hinder ventilation because most of the time the glass can be broken between the bars. They will create a major problem should the firefighters operating inside the structure need to use the barred window for emergency egress. Boarded-up windows, on the other hand, will impeded horizontal ventilation and prevent rapid egress of interior crews. While an

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encounter with window bars may seem formidable, most of the time they are easily removed.



They key is to identify the connection points. Many times window bars are either set into masonry walls with masonry screws, or lag bolts in the brick or mortar joints, or they are fastened to wood framed walls with wood screws. Very rarely will you find the bars through-bolted.



When removing bars or security mesh that are fastened to the exterior walls, the New York Roof Hook once again proves its superiority over all others. To remove the bars, place the lower hook behind the bar assembly, rotate the head of the hook perpendicular with the wall and lift up. In the photo below, notice the difference in force and leverage created when using the upper hook to pry(middle pic) and then the lower hook to pry(right pic).

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Photos Courtesy of Gabriel Angemi www.CMDFD.blogspot.com

The force created by prying with the lower hook and utilizing the upper hook as the fulcrum will typically be sufficient enough to either break the connection points or pull the bolts or screws out of the structure, thus freeing the bars. Work from the bottom of the bar assembly to the top, forcing loose one side and then the next. There are times when only one side is broken loose from the building that the bars will hinge away to the side of the window. This swinging of the bars allows us to move the bars away from the opening, complete ventilation of the window (if required), and then completely remove the bars in a position where we are not directly in-line with the ventilation opening and products of combustion.




On boarded-up vacant properties, plywood or OSB (Oriented Strand Board) sheathing can be attached over the exterior openings to secure the structure. It is critical to identify the connection points holding the exterior sheathing to the frame of the window or door it is covering. A majority of the time, the wood is screwed or nailed to the jamb of the door or window. In that case the Roof Hook makes quick work of removing the

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sheathing. To remove the plywood or OSB covering the opening, once again use the lower prying end to pry and the upper end of the tool as the fulcrum. Work the lower end behind the sheathing and lift perpendicular to the building. From that point walk the tool down the sheathing to pry loose or break all the connections. In the event the sheathing was secured with lag screws the prying power of the fulcrum may fail the wood sheets first, ripping the wood away and leaving the lag screws attached to the building. There is a greater potential for this if the wood has been weathered and begun to rot.

As the firefighter tasked with Forcible Entry (FE) we will be faced with doors in alleyways and the backside of commercial buildings that are beefed up to enhance their security. These doors are more common in areas that are considered high-crime areas or on high-value occupancies. They are often equipped with supplemental locking devices making them more difficult to force open. The Roof Hook can be used by the FE team to add a leverage when properly positioned with the Halligan Bar. This technique not only creates that force multiplier, it gives room for two firefighters to pull together, maximizing power and adding control of the force applied in a smooth steady pull. To accomplish this technique the Halligan Bar must be set into the outward swinging door with the Adz driven between the jamb and door. Place the chisel end of the roof hook against the pick on the halligan bar opposite the door. Hold the Roof Hook in line with the Halligan Bar so that the shaft of the Roof Hook is between the forks of the Halligan Bar and the door. By using the Roof Hook in this manner a greater amount of force is applied when gaining entry through the door.



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Inside


When operating inside the fire building it is a given that having a well designed hook is a benefit to both attack and search crews. When opening ceilings the Roof Hook once again establishes its superiority. Take note of the difference in the heads of the pike pole and the Roof Hook.



While the pike pole does an adequate job of pulling materials, a lot is left to be desired when it comes to breaching the initial hole. Its tip will pierce most materials without creating a sufficient opening to get the downward facing hook into the purchase. When pulling drywall ceilings it is not that obvious, however when challenged with lath and plaster or beaded ceiling boards the Roof Hook stands heads above the pike pole. The reason why is the beveled head of the Roof Hook. This beveled head allows the Roof Hook to break through the material, splitting the beaded board or lath making a larger purchase. Furthermore, stubborn ceiling materials that are challenging to pull loose from the ceiling joists can be pried loose with the Roof Hook.



Once overhaul begins and we are tasked with removing the trim work such as the crown moulding or door/window trim, the Roof Hook gives us the ability to make quick work of it with very little effort. The chisel end will easily slip behind the baseboard and can be used to pry it loose from a standing position. To accomplish this with the Roof Hook, place the chisel end approximately one inch above the baseboard and push down sharply, driving the chisel behind the trim. From that point, pry outward on the hook to

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loosen the board. The same can be accomplished on crown moulding; simply invert the tool so the chiseled end is facing upwards.



When removing door and window trim, use the lower hook. Position the lower hook approximately one inch above the horizontal header piece of door casing and pull down sharply. This maneuver will slide the lower hook behind the trim and then it is a matter of prying upwards to loosen the header piece. Perform the same on the vertical jamb pieces. In a short amount of time with very little effort the windows and doors of the fire room will be stripped of trim exposing the voids for inspection.



All of this information merely scratches the surface on the application of this tool. Imagination and ability should be the only limiting factors to the practical use of your tools, not craftsmanship or materials. We could not cover every detail and operation but we can present enough information to you about the importance of the design and construction quality to support the need to purchase the right equipment. What is most importance is ensuring that you purchase the right tool for the job when selecting hand tools for your company. By making the correct choices and then following up with top-notch training, you will increase the efficiency of your crew and increase the safety for everyone operating on the fireground.