Findings and analysis of the testing process of the MAXXIMUS REXX from Fire Hooks Unlimited

As performed by

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Introduction

What follows are the results of **SEARCH & DESTROY FIRE TRAINING**'s extensive testing of the Maxximus Rexx, as prepared for the manufacturer, including all positive and negative findings and our unabashed opinion of the tool's individual components and of the tool as a whole.

In all, we performed over 200 conventional-force evolutions and over 40 lock-pulls, in addition to several other types of tests.

PART ONE:
The Adz

The Adz

The adz of tool was the first thing we explored. Obviously the harder steel allows for a much thinner adz than that of the Pro Bar, and makes possible the bifurcation of the adz and its machined lock-puller.

Our first battery of tests were aimed at stressing the adz in an attempt to see if either "tooth" could be bent, broken, or twisted.

The Adz Tests

These tests focused mainly on conventional prying against our forcible entry door-prop, using heavy-resistance to simulate prying on heavy, commercial inward-swinging and outward-swinging doors. Among the more extreme tests we subjected it to was combining the tool with a 6' Roof Hook used as a "cheater bar", and linking the forks to a standard Pro Bar to extend the leverage.

This linked-forks technique is the most extreme test of a halligan-type tool that I know to perform….to the extent that when we teach this technique in our classes, we use one specific bar (an IAF brand one-piece halligan) for the first tool (the one inserted into the door), as this tool has been bent along the shaft due to repeated over-stressing.

The Adz Tests (cont'd)

For some of our more extreme tests, some flexion of the adz was noticed in the Maxximus Rexx. Most likely due to the extreme thinness of of the metal. It's unclear whether or not thickening the adz in the first half-inch or so would solve this problem, or if it did, whether or not this addition of more metal would complicate the milling of the Rexx lock-puller into the adz.

Our decided opinion at the end of testing was that despite the flexion when placed under extreme stress, we were still unable to break or permanently distort the adz. It's our feeling that some slight flexion is a small price to pay for an integrated lock-puller. It is also our opinion that ALL TOOLS can be broken by misuse, and that if this tool is broken, it is more likely a lack of training than a flaw of engineering.

The Adz: Leverage VS. Spread

In our tests, we discovered the reasons for the one-sided flare-out of the adz. The lop-sided shape allows the user, when prying against the short-axis of the adz, to choose in certain instances the amount of leverage and spread by partially inserting or fully inserting the adz.

A partial insertion of the adz before prying up or down (away from the pike) provides 2-3/4" of spread of the door from the frame, at an approximate mechanical advantage of 11:1 (30" bar divided by 2.75" wide adz = 11 MA).

The Adz: Leverage VS. Spread (cont'd)

A full insertion of the adz before prying up or down (away from the pike) provides 1-1/2" of spread of the door from the frame, at an approximate mechanical advantage of 20:1, (30" bar divided by 1.5" wide adz = 20 MA). This narrowest point of the adz of the Maxximus Rexx is equal to the narrowest point of the adz of the Pro Bar (1-1/2"), and thus offers the same leverage when used as described.

This finding was a major revelation in our testing, and even if taken alone is reason enough to declare this tool superior to the Aazel Monster Halligan and home-modified bars that flare on both sides of the adz.

The Adz: Crushing-Gap

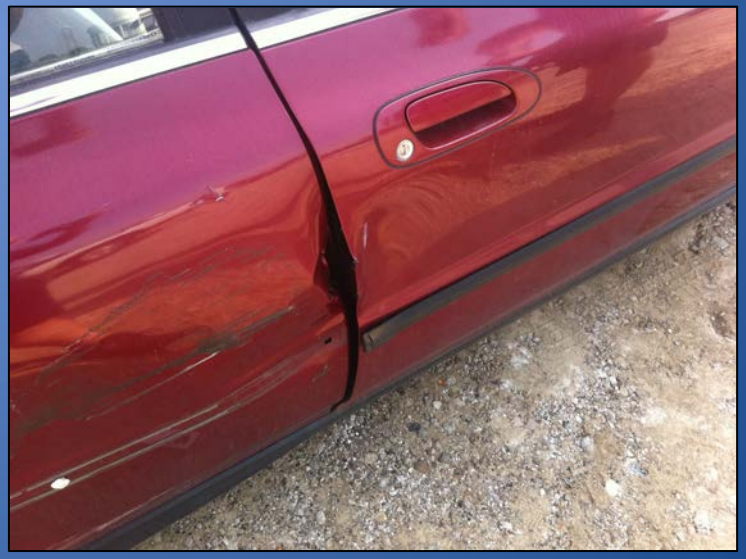
We were very curious about the difficulty of establishing a crushing-gap on a commercial outward-swinging door. We knew from our prior tests that the tool would withstand it, but we were concerned that the widest portion of the adz would have to be used, at an expense of leverage.

For this reason, I used the toughest commercial hollow-core door at my disposal. One of a double-door set I'd been saving for something special. This seemed like the ideal project for its sacrifice.

We had no problems gapping this door whatsoever with the Maxximus Rexx. It performed beautifully, and the slender adz was easy to insert into the seam between door and frame.

The Adz: Crushing-Gap (cont'd)

It also worked very well establishing a purchase-point for the spreader-tips while doing some extrication training.



The Adz VS. Carriage Bolts

In driving carriage-bolts through a door (to push drop-bars and sliding-bolts off of the inside of the door), we thought we would have to work significantly harder with the Maxximus Rexx than a standard Pro Bar. We assumed the bifurcation of the adz would slow us down, and that possibly finishing the job with the fork-end might be required.

We were wrong, after several attempts, we finally landed on this technique: 1) Drive a channel above the bolt using the pike. 2) Place the tooth of the adz that is closest to the pike on the bolt-head and drive the bolt-head partially into the door. 3) Switch back to the pike and finish driving the bolt through the door in this fashion.

It requires more attention be paid to the operation in step 3, but resulted in no loss of time whatsoever. In fact, we may begin teaching this technique in our classes even when using a standard Pro Bar.