



**Cheat sheets** can provide our members with the specifications we need to use a tool correctly and within its operating limits. Let's take cribbing for instance. Truck 1 carries 24-inch 4x4 cribbing, what would be the maximum safe height of a box crib using the cribbing off of our rig? Cribbing height is based off of the inner footprint of the cribbing (Fig.2) multiplied by 3.

Fig.2



When using cribbing we are supposed to overlap our cribbing the dimension of the wood we are using. In reality, we know a 4x4 is actually 3.5 x 3.5 but, let's keep the math simple. So, if a 4x4 box crib is overlapped properly, 8 inches is actually lost from our overall length. This would leave us with a 16" footprint. If we multiply 16" x 3 (safe working height), we would know that a 24" 4x4 can safely be used as a box crib up to 48" (4 Feet). The cheat sheet fastened to the compartment door where the cribbing is stored can provide us with the necessary facts we need to operate effectively and within safe-limits. It also allows us to access answers that may not be fresh in our heads but are necessary to know.

Compartment spacing also plays an important part in our equipment layout / storage. Many Departments across the country use milk crates to store cribbing. While the milk crate will store copious amounts of wood, the crate is quite awkward to carry long distances and up and down stairs. It may also limit how much you can store in a compartment. A simple and inexpensive modification that will allow you to carry the same amount of cribbing (if not more if

you use two hands) and a wooden ground pad as well, employs the use of 2 ratchet straps that can be purchased at your local hardware store (Fig.3) to create a **Cribbing Suitcase**.



Fig.3

The ground pad is constructed out of  $\frac{3}{4}$ " plywood. Extend the ground pad to allow room for a grab handle which can be routed out. The ground pad is placed in the center of the kit. Our cribbing will be placed on both sides of the ground pad allowing for up to 4 – 4x4's, 2 – 2x4's, and 2 – 4x4 wedges to be stored on each side. Using 1 Cribbing suitcase will allow for the building of a 14" high box crib (3.5" x4) without the use of the pad, 2x4's or wedges.

### **Bringing Back the Dinosaurs:**

Many times, in the Fire Service, we have an "out with the old and in with the new" mentality. Tools that served us well in the past can be welcomed additions back on our rigs. The Porto-Power is one tool that comes to mind. Think of the advantages this tool presents as far as options and accessibility. It has a multitude of attachments that can be used in many scenarios, requires no fuel or battery and can be transported into far and tight locations. The Scoop Stretcher is another tool that is not commonly carried but can provide simplistic solutions to complex scenarios.

I have seen the scoop stretcher used most commonly at impalement type of emergencies. The ability to disconnect and reconnect this stretcher allows us better access to our patients without compromising their position.

Old SCBA Harnesses can be transformed into an all in one air operation unit (Fig4.).



Fig. 4

Air Bag operations take time to set up. The system is generally stored in hard cases and needs to be removed and put together in order for an operation to commence. The “All in One” system allows a rescuer to transport the complete system and set it up for use in a fraction of the time of conventional storage systems.

**Kit Additions:**

Teaching across the country, people love to show us the “Man vs Machinery” Kits they have created. While the kit may encompass every tool that one could imagine getting a job done, the issue arises of how heavy and practical a kit should be. A “Man vs Machinery” kit should be designed similar to an Old School Doctor’s Kit (you know the one that use to make house calls). The kit should be compact and easy to transport with basic tools that can either get the job done or sustain it until the cavalry shows up. The kit designed by PL Vulcan Fire Training LLC (Fig.5) carries the appropriate amount of equipment to perform a multitude of operations. Modifications can be made to this list dependent on your response area.

Fig.5



### **Let's Talk Rig Removal:**

Snap Ring Pliers Aka Reversible Pliers are a must for every kit (Fig.6) They are as basic as the pair pictured or can be complex with multiple attachment heads. The cost can range from \$2.99 to \$19.99. It has been this author's experience that simplicity works. The Snap Ring Pliers are most useful in ring removals once a cut has been made. The beauty of the reversible pliers is the ability to squeeze the pliers to gain a spread in the ring.



Fig.6

Vise Grips are a great addition to the ring removal world, in particular, when it comes to removing rings such as tungsten and ceramic. The use of the Vise Grip with the attached "eye bolt" is a welcomed addition to the ring removal tool cache (Fig.7). The vise grips can be locked on to a ring made of tungsten or ceramic. A tool such as a screw driver can be used through the eye bolt (Fig.8) to provide the turning action that is required to create pressure on the ring to crack it. This "controlled" option provides a lot less stress on the victim and is easily maintained for a smooth removal.



Fig.7



Fig.8

### **Handling Heat:**

Whether cutting a ring, removing a hand from machinery or freeing an impaled object from a victim, some form of heat can be generated. What is your plan to relieve this condition? Providing comfort from the effects of heat can be quite basic and inexpensive, but needs to be a ready-component in your Man vs Machinery cache. Heat can be dissipated simply by using a bottle of water with a sports top (or hole created in the cap), use of moistened gauze or heat dissipation products such as plumber's putty or HVAC Duct Seal (Fig.9). These products are readily accessible at your local hardware store and can prove to be invaluable at situations, such as an impalement.



Fig.9

### **Let's Wrap it Up:**

Firefighter's need to have the skills and resources available to handle the multitude of entrapment calls we may respond to. The "think tank" we have available around our kitchen table in the fire station is second to none. Drill amongst your crew members on odd jobs you may have faced and could potentially do better on, or situations that could occur but haven't yet. This article is only the tip of the iceberg on Machinery Extrication Incidents and "Odd Jobs." Stay tuned for more "Tricks of The Trade- Man vs Machinery."

### **Bio:**

Mark Gregory is a 32-year veteran of the fire service. He has been a member of the FDNY for 28 years and is currently the Captain of Ladder 176 "The Tin House Truck". Previous assignments include Tower Ladder 142, Tower Ladder 111, Rescue 2 and Ladder 132. Mark instructs at the FDNY and Suffolk County Fire Academies. He is a Lead Instructor with PL Vulcan Fire Training and an active member of his hometown volunteer fire department in East Quogue, New York.