

Community Emergency Response Team









Cribbing

Released: 16 April 2025 **Contra Costa CERT Coalition**

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Community Emergency Response Team


-  Personal safety is ALWAYS the number one priority
-  Show up prepared
 - Wear appropriate clothing and footwear, have WATER
 - Wear PPE - your personal protective equipment ...gloves, helmet, goggles, mask, boots, etc.
 - Have at least one communications device: cell, radio, etc.
-  Work as a team
-  Size-up - maintain situational awareness
-  The CERT goal is to do the **Greatest Good for the Greatest Number**
-  *Hope for the best but plan for the worst!*

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Unit Objectives

 Use safe techniques for debris removal and victim extrication using a lever and cribbing



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Leveraging and Cribbing Operations



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Cribbing Planning and Staging

- 👤 Conduct a **Size-up** of the scene
- 👤 Have one person in charge and formulate an action plan
- 👤 Gather necessary materials for leveraging (lifting) and cribbing operations



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Crush Syndrome

- 👤 Crush syndrome is a medical condition that dictates whether a victim should be removed from a crushing load
- 👤 A crush injury is the result of a body part, usually an extremity, being subjected to a high degree of pressure
- 👤 At crush release, the products of muscle breakdown are reperfed into the blood and are circulated. The person may suffer major shock, renal failure, or heart attack and death may occur
- 👤 If a crush has been in effect for 30 minutes or more, Crush Syndrome Protocol must be observed.

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Crush Syndrome Protocol - 1

Presuming No Professional Rescuers are available and Victim must be extricated before EMS can respond:

If crush is to torso, stabilize scene with cribbing, if possible, and inform victim that:

- 🧑‍🚒 Removing the crush could be life-threatening
- 🧑‍🚒 Victim must be left in crush until advanced help is available
- 🧑‍🚒 CERTs do not have needed drugs or skills to counteract crush induced blood contaminates during reperfusion
- 🧑‍🚒 Additional Professional EMS help will be summoned

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Crush Syndrome Protocol - 2

If crush is to extremities and cause of entrapment can be stabilized with cribbing, volunteers may attempt to extricate by strictly adhering to the following protocol:

- 🧑‍🚒 Make plan to transport to trauma center
- 🧑‍🚒 < 30 minutes, consider tourniquet/s
- 🧑‍🚒 ≥ 30 minutes, utilize tourniquet/s
- 🧑‍🚒 Immediately prior to extrication, apply two tourniquets to crushed extremities, proximal to crush, if possible
- 🧑‍🚒 Extricate victim
- 🧑‍🚒 Transport to Advanced Medical Care immediately



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Leveraging and Cribbing Operations


- 
 When a large object such as a collapsed wall or heavy debris needs to be moved in order to free victims, leverage and cribbing may be used.
 - > **Leverage** is obtained by wedging a lever (pole or other long object) under the object that needs to be moved with a stationary object underneath it to act as a fulcrum. When the lever is forced down over the fulcrum, greater force is obtained to lift the object.
 - > A **crib** is a framework of wooden, plastic or metal bars used for support or strengthening. *Box cribbing* means arranging pairs of wood pieces alternately to form a stable rectangle. In a disaster situation, debris may be available to use for cribbing.
- 
 Leveraging and Cribbing are **Perishable Skills** and must be practiced regularly

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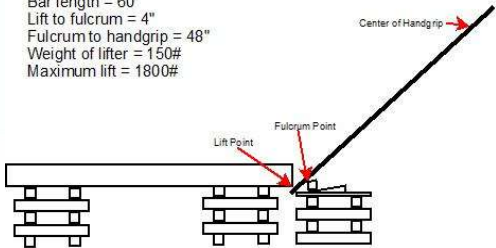
Leveraging

- 
 Lever Defined: A rigid bar, either straight or bent, that is free to move on a fixed point called a fulcrum
- 
 A lever works by transferring a force from one place to another while at the same time changing the direction of the force



Clallam County Technical Rescue Team photo

Bar length = 60"
 Lift to fulcrum = 4"
 Fulcrum to handgrip = 48"
 Weight of lifter = 150#
 Maximum lift = 1800#






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Leveraging

Lift an inch, Crib an inch

-  Stabilize the object to be lifted
-  Initiate the lift using the lever and fulcrum for mechanical advantage
-  Have someone available to handle the victim
-  As the object is lifted, add cribbing as needed; build on the foundation of the box crib
-  When the object is adequately supported, the victim may be removed

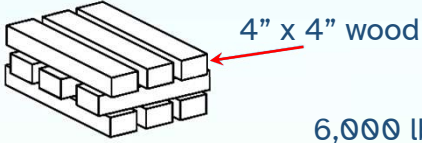
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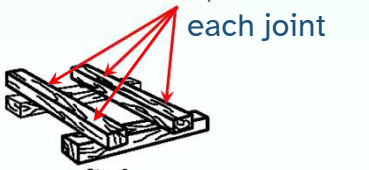
Cribbing

24,000 lbs. total if load is supported by 4 joints


54,000 lbs. total if load is supported by 9 joints




4" x 4" wood



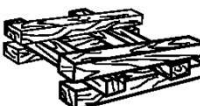
6,000 lbs. at each joint




Step 1



Step 2



Step 3



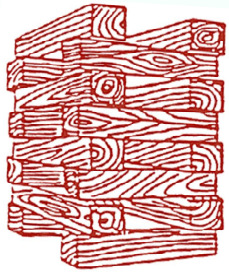
Step 4

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Cribbing

- 🛡️ Wood fails at cut ends first
- 🛡️ Overlap ends by width of member - 4x4 = 3.5" overlap
- 🛡️ Don't crib higher than three times the footprint (width) of the crib
- 🛡️ Load needs to be supported with wood-to-wood contact all the way to the ground



Visual CRIB.12



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Cribbing

- 🛡️ Shims are used to match the angle of a surface
- 🛡️ Shims balance the load by ensuring even contact

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Cribbing

- 👤 Wedges, inserted as Married Pairs, are used as variable height crib members
- 👤 Wedges can be used as Inclined Planes to prevent sliding movement
- 👤 **Single wedges can be used for temporary stabilization until flat pieces can be inserted**

“MARRYING” Wedges

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Cribbing Checklist

- 👤 Safety is most important
- 👤 Size-up the situation
- 👤 Stabilize the load
- 👤 Remove debris
- 👤 Raise the load
- 👤 Rescue the victim
- 👤 Lower the load
- 👤 **Keep hands and toes clear of the load at all times!**

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Resource Arrangement Example

Arrangement For Leveraging/Cribbing Operation

The diagram illustrates the roles of personnel during a cribbing operation. A dashed line indicates a 'Wall Collapse' area. A stretcher is positioned horizontally, with a 'Medical Care or Victim Removal Person' at the top end. A 'Crib Person' stands behind the stretcher, and another 'Crib Person' stands in front of it. A 'Lever Person' is positioned to the right of the stretcher, and a 'Group Leader' is positioned to the right of the lever person. A silhouette of a city skyline is visible at the bottom of the diagram.

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Cribbing Video

A photograph showing four workers in white t-shirts and green hard hats performing a cribbing operation. They are gathered around a large, rectangular object, likely a piece of equipment or a vehicle component, which is being supported by a cribbing structure. The workers are wearing safety gear, including gloves and hard hats.

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Questions ?



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