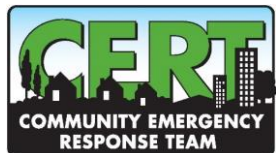


CERT Basic Training

Unit 7: Lifting and Cribbing



FEMA

Unit Objectives



1. Demonstrate safe techniques for debris removal and survivor extraction during search and rescue operations

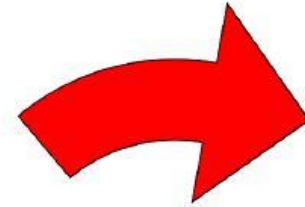


PM 7-1

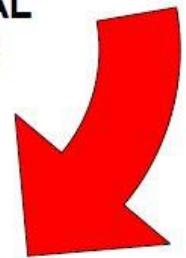
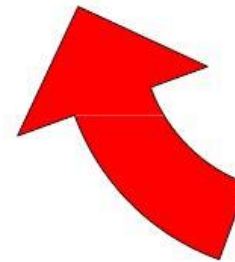
CERT Size-up



1. Gather Facts
2. Assess Damage
3. Consider Probabilities
4. Assess Your Situation
5. Establish Priorities
6. Make Decisions
7. Develop Plan of Action
8. Take Action
9. Evaluate Progress



REMEMBER:
CERT SIZE-UP IS
A CONTINUAL
PROCESS



- Facts
- Anticipate
- Plan
- Act
- Review

PM 7-3



Rescue Operations



- Remove objects and debris to free survivors and create safe rescue environment
- Assess survivors
- Remove survivors



PM 7-17

Creating a Safe Environment



- Maintain rescuer safety
- Assess survivors in lightly and moderately damaged buildings
- Evacuate survivors as quickly as possible

Precautions to Minimize Risk

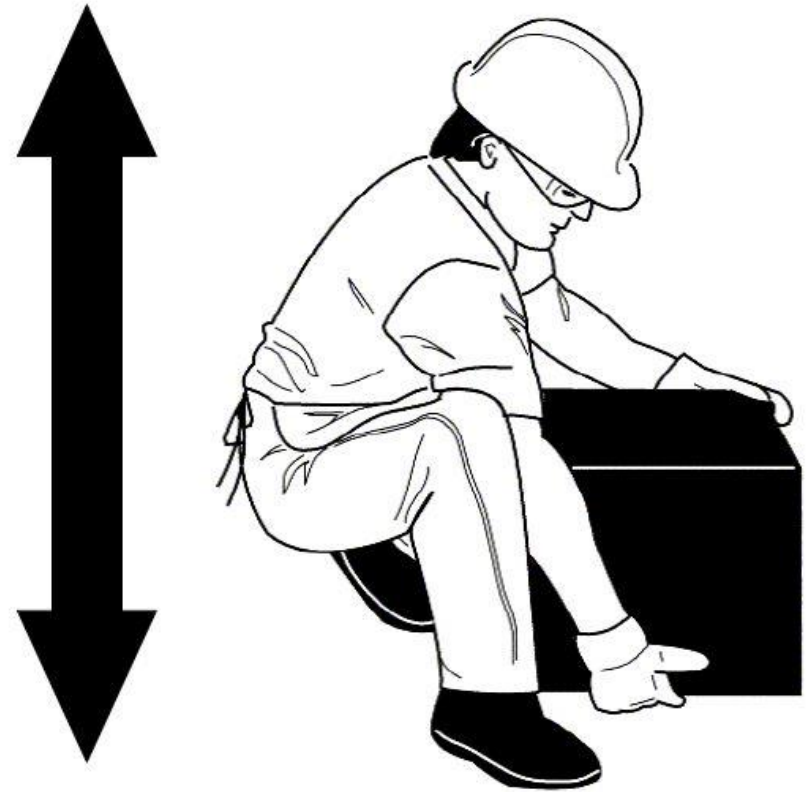


- Know your limitations
- Follow safety procedures
- Remove debris by leveraging and cribbing

Proper Lifting Procedures



- Back straight
- Bend knees
- Keep load close to body
- Push up with legs



PM 7-18

Leveraging and Cribbing



- For heavy lifting
- Performed in tandem
- Helps extricate survivors



- Various materials and objects may be used

PM 7-18

Leveraging and Cribbing



- **Leveraging** is accomplished by wedging a lever 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, the far end of the lever will lift the object.
- **A crib** is a wooden framework used for support or strengthening an object.
- **Box cribbing** means arranging pairs of wood

Safety is number one: "Lift an inch; crib an inch." Caution that leveraging and cribbing should be gradual for stability, safety, and efficiency.



Leveraging and Cribbing



- Leveraging and cribbing at more than one location (e.g., front and back) to ensure stability.
- **NEVER** leverage and crib at opposite ends at the same time because doing so will increase the instability of the debris.
- If leveraging is required at both ends,
 - suggest that the participants lift and crib at one end,
 - then repeat the process at the other end.



Leveraging and Cribbing



- Positioning the lever and the fulcrum correctly is critical for safe operations.
- The fulcrum and pry tool must be perpendicular (90 degrees) to the edge of the object being lifted.
- Attempting to leverage a heavy object using too sharp of an angle is inefficient and can result in back injury.
- Box cribbing is stable but requires pieces of cribbing material of relatively uniform size



Leveraging and Cribbing

Step 1: Conduct a size-up of the scene: Gather facts, identify hazards, and establish priorities.

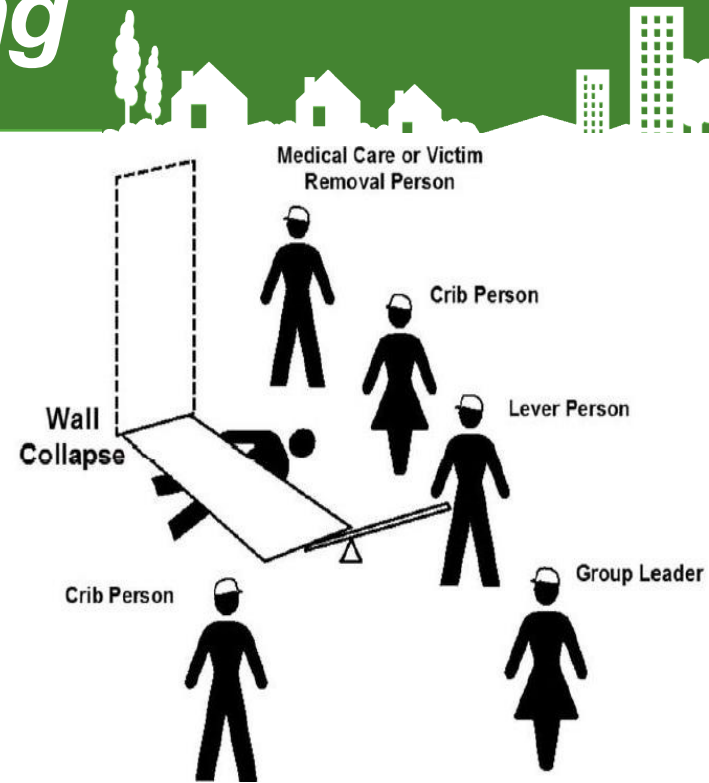
Step 2: Have one person in charge and formulate a plan of action based on the information you have received, to identify how and where to lift and crib to determine how you will remove the survivor from underneath the debris.

Step 3: Gather necessary materials for lifting/cribbing operations: lever, fulcrum, cribbing blocks, spacers/wedges. During an actual emergency, you may have to use creative, substitute materials.

Step 4: Use cribbing materials to stabilize the object prior to lifting.

Step 5: Distribute cribbing materials as necessary to be readily accessible during the lifting operation.

Step 6: Prepare to lift the object: Assemble the lever and fulcrum at the previously identified location.



Leveraging and Cribbing

Step 7: Assign a person to monitor and be ready to remove the survivor as soon as possible.

Step 8: Initiate the lift, using the lever and fulcrum for mechanical advantage.

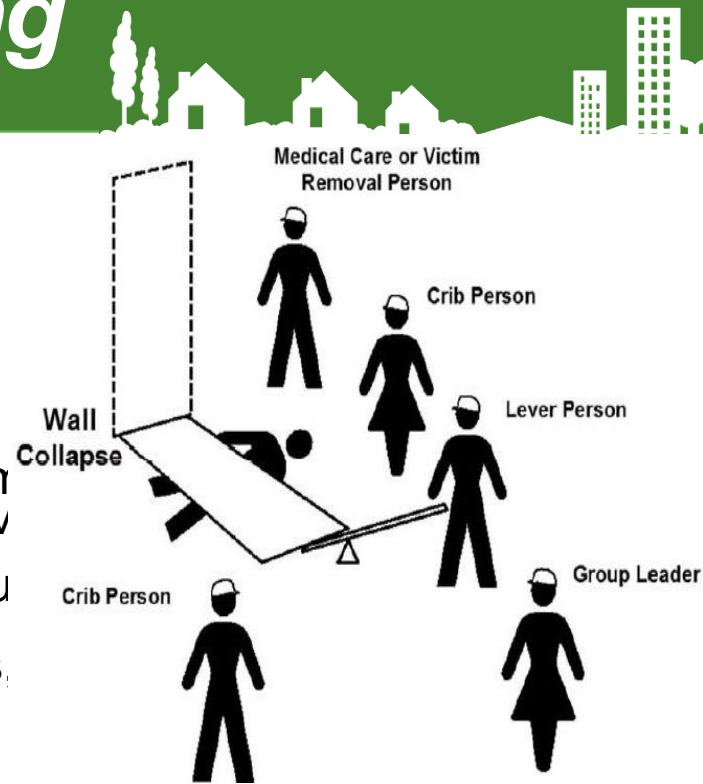
Step 9: As the object is lifted, add cribbing as needed layer at a time.

Step 10: Once the object is adequately supported, reposition the lever and fulcrum. You may then remove the survivor.

Step 11: Unless the event has left the structure obviously compromised requiring you to evacuate immediately, reinitiate the lift and begin removing cribbing materials, reversing the process by which you built the crib.

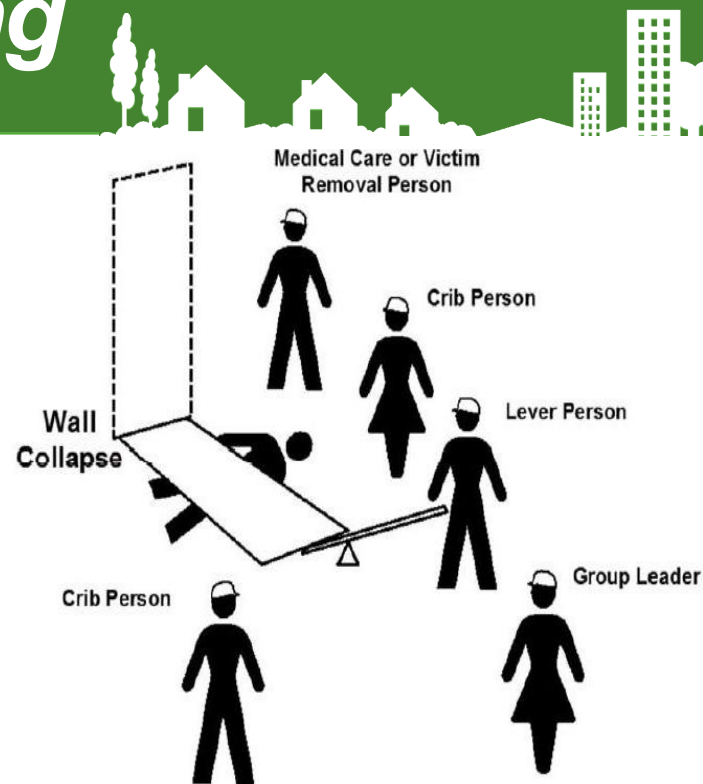
Step 12: Progressively lower the object to the ground. Always return the heavy object to a stable position unless you have to evacuate immediately.

Step 13: Before you leave, remember to collect the lifting/cribbing supplies to be available for additional operations.



Leveraging and Cribbing

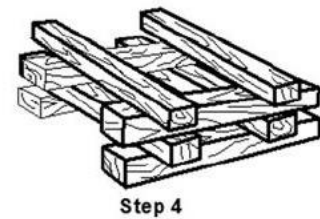
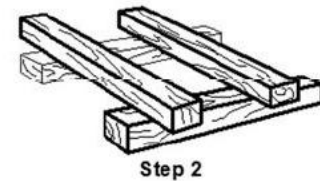
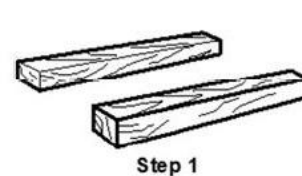
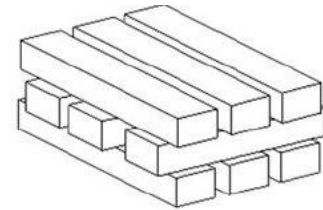
- **Group Leader:** In front of the collapse, positioned so that he or she can view the entire operation while remaining out of the rescuers' way;
- **Lever Person:** At the front edge of the collapsed wall and positioned so that he or she can position a fulcrum and lever under the wall;
- **Crib Persons:** On either side of the collapsed wall and positioned to enable the placement of cribbing as the wall is raised with the lever; and
- **Medical Care/Survivor: Removal Person:** Next to the Crib Person who is closest to the survivor's head



Leveraging and Cribbing



- **Building box cribbing:**
- **Step 1:** Position two pieces of wood parallel to each other on either side of the collapse.
- **Step 2:** Place two pieces of wood perpendicularly across the base pieces.
- **Steps 3 and 4:** Add additional layers of wood, with each being perpendicular to the previous level.



Four Steps to Box Building



Two Types of Removal



1. Self removal or assist; and
2. Lifts and drags



PM 7-21

Which Extrication Method?



- Extraction method depends on a number of criteria
 - General stability of the immediate environment
 - Number of rescuers available
 - Strength and ability of the rescuers
 - Condition of survivor



PM 7-21

One-Person Arm Carry



- Lift around survivor's back and under his or her knees
- Lift survivor by keeping your own back straight and lifting with your legs



PM 7-21

Pack-Strap Carry



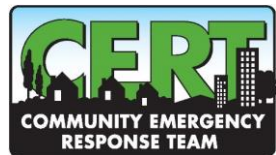
PM 7-22



Two-Person Carry



PM 7-22



Chair Carry

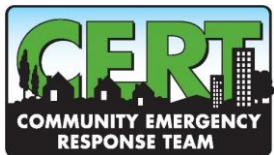


PM 7-23

Blanket Carry



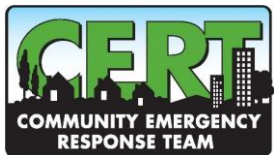
PM 7-24



Log Rolling



PM 7-25



Blanket Drag



PM 7-25

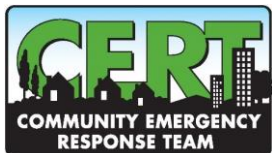


Exercise 7.3



- Break into teams of seven
- Members of your team will volunteer to be “victims” that other team members will move using the drags and carries demonstrated in the class
- Use chairs and other items as needed to perform the drags and carries
- Trade off “victim” and “rescuer” roles so that everyone on your team has a chance to practice the drags and carries
- Know your limits! Do not attempt any lift or carry that will not be safe for you and the victim

PM 7-26



Exercise 7.4



- Break into teams of seven
- Your team will be directed to a “damage site.” Consider your plan of action
- Enter “damage site” and conduct room search. Locate victims and make plan to extricate them from debris
- Leverage and crib as needed to free the survivor
- Use appropriate lifts and drags to remove victims from the room (and, if possible, from the building)
- If there is a second “damage site,” conduct another rescue operation

PM 7-26



Unit Summary



- You should know
 - How to decide whether to attempt rescue
 - The objectives of interior and exterior search and rescue
 - How to perform search and rescue size-up
 - Building markings
 - Rescue functions
 - How to remove debris
 - How to extricate survivors

PM 7-27

