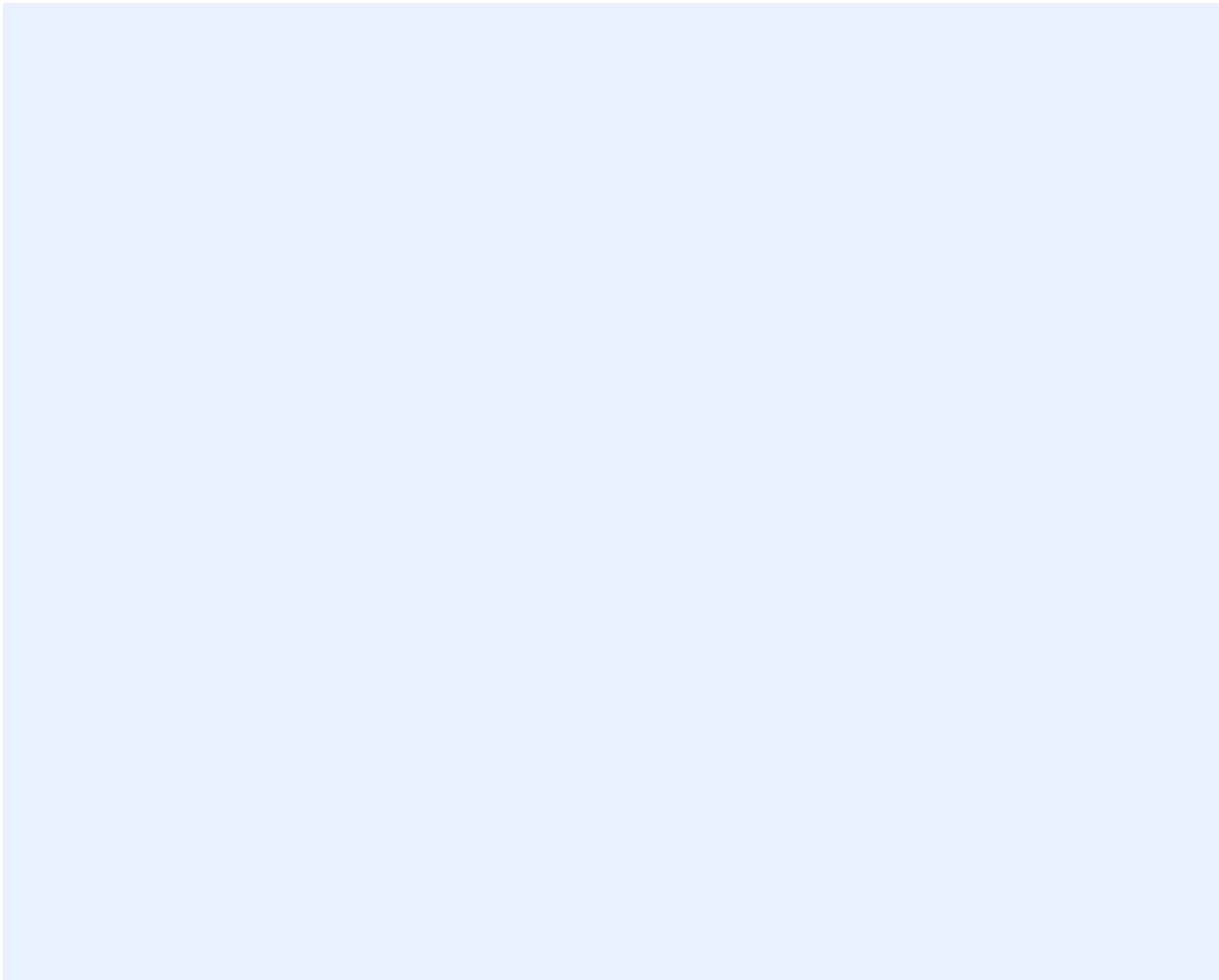




Crane Awareness

**Worldwide Safety Awareness Pause
January 16 – 29, 2011**

Bechtel Construction Operations, Inc.



Basic Rules

- **Training / Competency**
 - ▶ Ensure entire crew is well trained, experienced and competent to operate the particular crane and all related functions
- **Maintenance**
 - ▶ Ensure proper maintenance of the crane
- **Preparation**
 - ▶ Site supervision must be aware of their responsibilities and understand what must be done to prepare the site for the crane operation



Crane Operator Responsibilities

Includes, but is not limited to:

- Be totally familiar with load charts and all crane functions listed in the operators manual
- Know all applicable regulations for crane operations
- Inspecting and maintaining the crane regularly
- Check site conditions and coordinate all activities with site supervision



Crane Operator Endorsement

- Operators have a crane license /certificate
- Demonstrate proficiency in crane set up and operation
- Know the manuals



Crane Hazards

- Electrocution Hazards
- Caught-In, Compressed or Crushing Hazards
- Struck-By Hazards
- Other Hazards



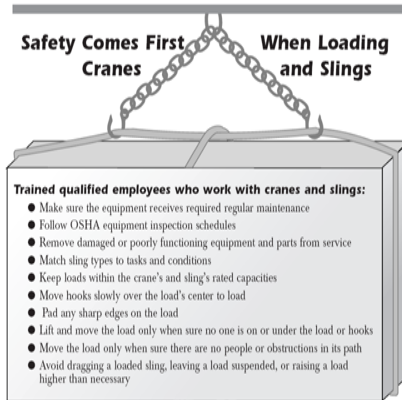
Watch Your Surroundings

- Take 5 for Safety
- Crane Operations Personnel
 - ▶ Make positive eye contact with mobile equipment operator
 - ▶ Confirm by visual signals (Go/No-Go)
 - ▶ Intentions are understood
- Inspect Ground Conditions
- Ensure proper crane pad is constructed

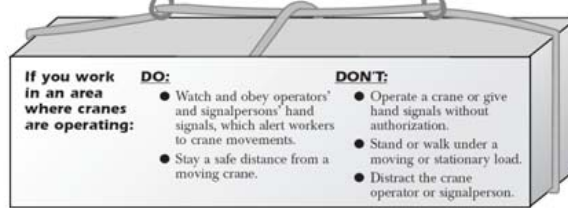


Crane and Sling Safety

- Check for regular equipment maintenance
- Follow inspection schedules
- Remove damaged equipment
- Match sling types to task/condition
- Always check load capacity
- When loading, move hooks slowly over load's center
- Pad sharp edges
- Always check for personnel under or around load or hooks
- Avoid:
 - ▶ Dragging a loaded sling
 - ▶ Leaving load suspended
 - ▶ Raising load higher than necessary



Crane and Sling Safety Do's & Don'ts



■ Do

- ▶ Watch and obey hand signals
- ▶ Stay safe distance away from moving crane

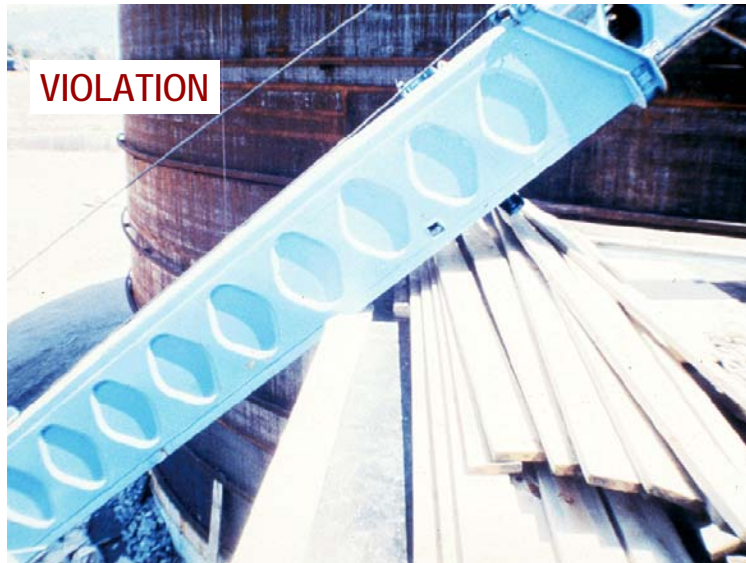
■ Don't

- ▶ Operate crane or give hand signal without authorization
- ▶ Stand or walk under a moving or stationary load
- ▶ Distract the crane operator or signalperson



Improper Crane Use

- Never allow a crane boom to hit or touch any structure



Shackle Identification

■ Shackle Identification

- ▶ Shackle must have proper identifying markings:
 - ▶ WLL – working load limit
 - ▶ Size
 - ▶ Manufacturer – CROSBY on reverse side.

■ Incorrect shackles (if found)

- ▶ Remove from service
- ▶ Dispose in rigging loft

Correct



Incorrect



Four Basic Rules of Rigging

1. Know the Weight
2. Know the Capacity
3. Retain the Load
4. Control the Load



Practice Safe Rigging

- Watch for loose boards



- Be cautious of unsecured loads



Severe injury or death can occur!



Proper Tag Line Use



Proper Load Line Tieback

Single Grip



Single Saddle Wire Rope Clamp



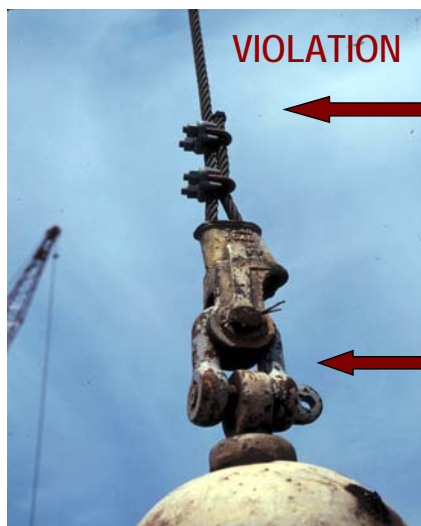
(Single Saddle with U-Bolt)

Double Grip, Double Saddle Wire Rope Clamp



(Two Separate Saddles with U-Bolt)

Load Line Tieback – Unacceptable Method

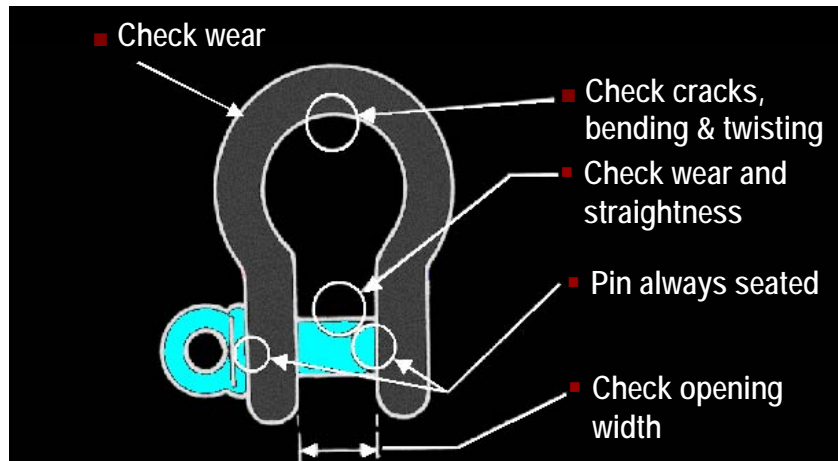


- Wrong! This type of wire rope clip (single grip, single saddle) will transfer the weight of the load to the dead end of the load line
- Wrong! Attaching the wedge socket directly to the load ball without the use of a shackle



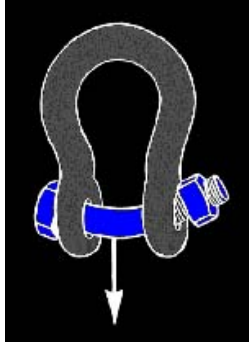
Shackle Inspection

- Check and Inspect



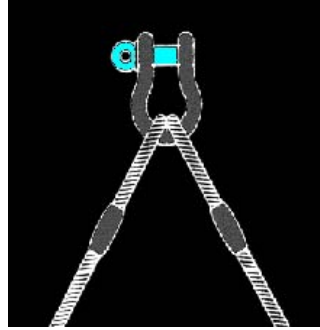
Proper Shackle Use

- Never replace a shackle pin with a bolt



The load will bend the bolt

- Check manufacturers specs on Side Loading



120 degrees maximum

Important Reminders

- Avoid pinch points
- Wear proper PPE
- Use caution around unguarded machinery
- Ensure proper hand clearance
- Never stand under or in line of fire of suspended loads
- Adhere to clearance and height guidelines
- Plan the Work – Work the plan
- Always Take 5 for Safety
- Look out for one another



- ▶ **Avoid pinch points – these are areas where your hands can become trapped or smashed between two objects. Examples of pinch points include the operation of a metal press, stacking boxes, barrels placed tightly together and where a sprocket and a chain come together.**
- ▶ **Wear gloves that are project approved for the type of work you're performing; gloves can protect your hands from cuts, abrasions, and splinters as well as prevent burns and chemical injuries.**
- ▶ **Never work around moving machines while guards are removed; this places your hands in the line of fire of potential pinch points.**
- ▶ **Ensure you have proper hand clearance when setting down loads, or carrying loads through doors.**
- ▶ **Never stand under, or in the line of fire of suspended loads.**
- ▶ **Always ensure you have enough room to work safely.**
- ▶ **Never place yourself between a suspended load, or moving vehicle and a fixed structure.**
- ▶ **Respect max clearances and height of stacked loads.**
- ▶ **Plan the work, include hold points, work the plan, and don't deviate.**
- ▶ **TAKE 5 FOR SAFETY & LOOK OUT FOR ONE ANOTHER.**

