



The Professional Rigger®

Volume 13 Number 2

August 1998

TECHNICAL NEWS

Rigging Double Check

When a load is being rigged for moving with a mobile crane, the crane operator can quickly estimate the slings and shackles required for the lift.

In the column to the right, you'll notice Section 20, from ITI's new Mobile Crane Operator's Reference Card. The section was designed to help approximate the minimum rigging necessary, based on tension or load weight. Standard rigging cards provide more exact data, but for estimation from the operator's perspective, this will get close without being under-rigged. To find out more about this outstanding field product, call 1-888-567-8472.

Workshop Assignment

Double check the selections made by the rigging crew to see if they have rigged the load with sufficiently rated rigging equipment. (Answer Key Page 4, Col.3)

Mobile Crane Operator Reference Card - Section 20

Rigging Selection based on Tension

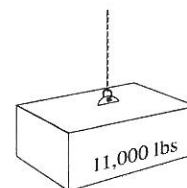
| Tension in pounds | Wire Rope Slings 6x19 IPS IWRC | Web Slings Nylon flat | Chain Slings Alloy G-8 | Round-slings Polyester | Master Links Alloy | SPAnchor Shackles Carbon | Flat Shackles Alloy |
|-------------------|--------------------------------|-----------------------|------------------------|------------------------|--------------------|--------------------------|---------------------|
| 4,000 | 1/2 | 2-9-2 | 5/16 | EN60 | 1/2 | 1/2 | 1 |
| 6,000 | 5/8 | 2-9-2 | 3/8 | EN60 | 5/8 | 5/8 | 1 |
| 8,000 | 3/4 | 2-9-3 | 1/2 | EN90 | 3/4 | 3/4 | 1.5 |
| 12,000 | 7/8 | 2-9-5 | 1/2 | EN150 | 1 | 7/8 | 1.5 |
| 16,000 | 1 | 2-9-6 | 5/8 | EN180 | 1 | 1 | 2 |
| 20,000 | 1-1/8 | 4-9-4 | 3/4 | EN240 | 1 | 1-1/4 | 3 |
| 24,000 | 1-1/4 | 4-9-6 | 3/4 | EN360 | 1 | 1-1/4 | 3 |

To estimate total capacity of multi-leg sling assembly based on Angle and Number of Legs in the Assembly:
Multiply Load Factor at right x Tension rating from above.

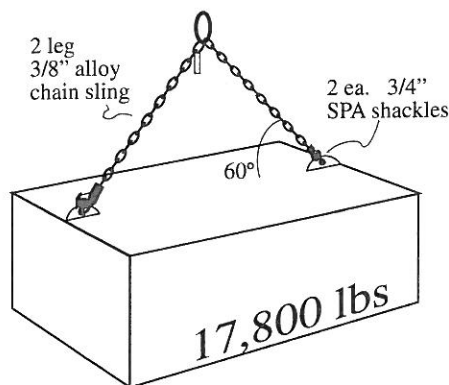
Example 1/2", 3-leg chain assembly @ 45° =
2.12 x 12,000 = 25,440 lbs.capacity

| Angle | 2-leg or 4-Leg | 3-Leg |
|-------|----------------|-------|
| 90° | 2.00 | 3.00 |
| 60° | 1.73 | 2.60 |
| 45° | 1.41 | 2.12 |
| 30° | 1.00 | 1.50 |

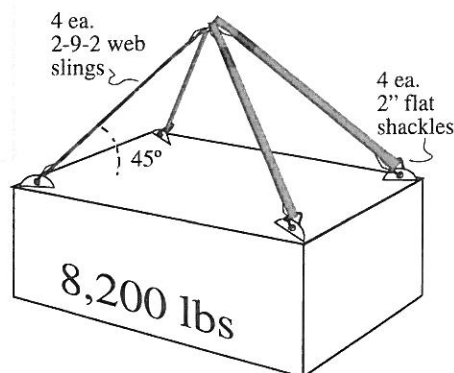
- What are the sling/shackle descriptions required to lift the load at right?
 - If wire rope sling, then the wire rope diameter should be _____".
 - If roundsling, then use an _____.
 - If alloy chain sling, then the chain size should be _____".
 - The SPA shackle attached at the load should be _____".
- Based on the slings and shackles assembled by the riggers for the following loads, indicate if the rigging equipment is being used Within or Beyond its rated capacity.



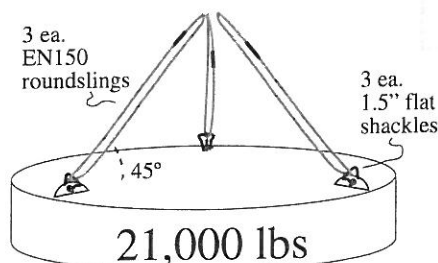
| | Within RC | Beyond RC |
|----------|-----------|-----------|
| Slings | | |
| Shackles | | |



| | Within RC | Beyond RC |
|----------|-----------|-----------|
| Slings | | |
| Shackles | | |



| | Within RC | Beyond RC |
|----------|-----------|-----------|
| Slings | | |
| Shackles | | |



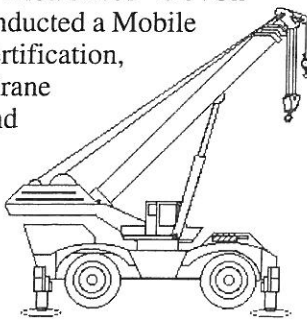
CLIENT NEWS

Montana Power

WRRC was asked to perform hoist rope inspections on overhead cranes at several locations in Montana. At the conclusion of the inspections an in-depth report consisting of analysis, conclusions and recommendations was submitted.

George G. Sharp

WRRC's Instructor Devon Beasley conducted a Mobile Crane Recertification, Monorail Crane Operator and Comprehensive Rigging Program for eleven individuals at their Bremerton, WA site. The courses consisted of written exams and hands-on evaluations for each operator.



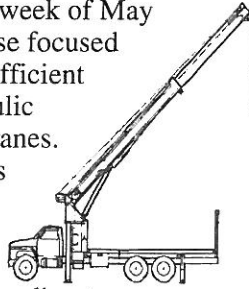
Certified Inspection Programs

Broken wires and crushed web fibers were only two of the dozens of inspection criteria discussed during the three-day CIP Programs presented to 12 individuals at **Mason & Hanger** in Amarillo, TX and 22 individuals at **Total Tool Supply** in St. Paul, MN. Participants completed written tests and performed numerous hands-on inspections of various types of rigging gear during the programs.

The Professional Rigger is a publication of Wire Rope & Rigging Consultants. It is distributed to those whose occupations require the safe, proper, and proper use of lifting and rigging equipment. For more information contact The Professional Rigger PO Box 1660 • Woodland WA 98674 (360) 225-1100

Northwest Alloys, Inc.

WRRC conducted a five-day Mobile Crane Operator Program the week of May 18. The course focused on safe and efficient use of hydraulic boom type cranes. The operators performed a series of lifts and were evaluated according to their abilities on the crane.



WRRC's Rigging Programs

Comprehensive Rigging

Naval Submarine Base

Groton, CT was the site of a two-day Comprehensive Rigging program. Major strong points of the program, as identified by the eleven individuals who attended, included determining the center of gravity, the importance of proper rigging, finding sling tensions, and the use of WRRC's Rigger's Reference Card.

Total Tool Supply

WRRC presented a two-day Comprehensive Rigging Program for 22 participants at their St. Paul, MN site. Mr. Rich Knoche coordinated the program which was conducted by WRRC instructor Devon Beasley. The course consisted of eight hours classroom instruction followed by a series of "live-load" field rigging exercises.

Boeing

Fifteen individuals attended a two-day Comprehensive Rigging Program at Boeing's Kent, WA location. The use of dynamometers during the hands-on portion of the training assisted in reinforcing or correcting the estimation method used to calculate the weight of the loads being lifted.

Unocal

Nikiski, AK was the site of a two-day Pedestal Crane Operator Program. 19 individuals attended the program which addressed variations of static versus dynamic load charts and the changing of capacities for off water or off platform lifting.

PGT

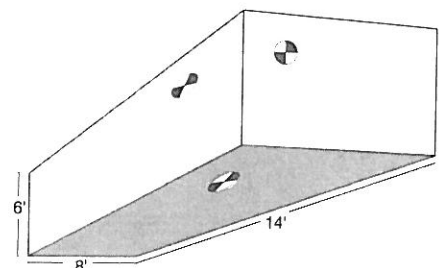
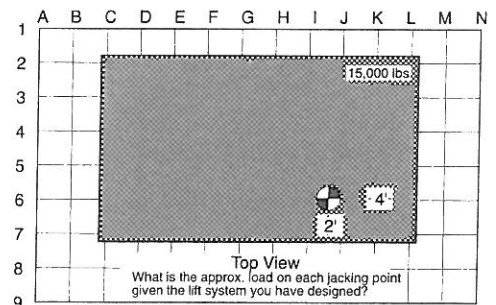
A two week Commercial Driver's License (CDL) skills enhancement course was presented by WRRC's Russ Donaldson at PGT's Klamath Falls location. The course covered pre-trip inspection, simple maintenance and driving regulations.

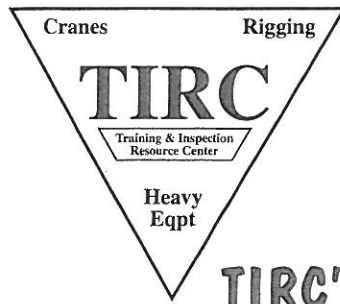
Master Rigging

Cianbro Corporation

WRRC Instructor Devon Beasley presented a five-day Master Rigger Program in Baltimore, MD.

The program activities included drifting loads using two hoists, jacking & rolling, picking & turning, load leveling techniques, inclined planes, and more. The eight participants attending the program learned to predetermine loading within a rigging system before making the lift or movement.





Toll Free • 1-888-567-8472
M-F 8am-5pm (PST)

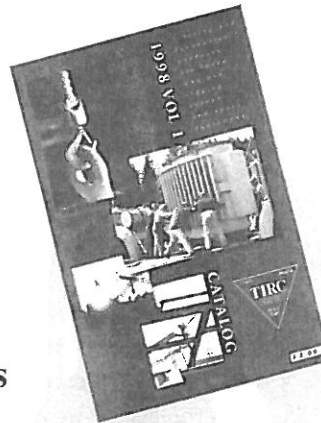
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For additional information, contact your friends at:

**Training & Inspection Resource Center
9428 Old Pacific Hwy • Woodland, WA 98674
Phone (888)567-8472 • Fax (360)225-5666
website: www.tirc.net • e-mail: tirc@aol.com**

WRRC NEWS

SIGN UP NOW!

WRRC & CET are offering training at their *new* corporate facility in Woodland, WA. The programs which have been well attended offer instruction in a variety of subjects.

All of the programs consist of written workshops followed by hands-on exercises which help put



into practice the concepts and techniques taught in the classroom.

The remaining programs scheduled for 1998 include:

- *Master Rigger*
Sept. 22-25
- *Mobile Crane Inspector*
Oct. 20-23
- *Rigging Gear Inspector-Level III*
Dec. 15-17

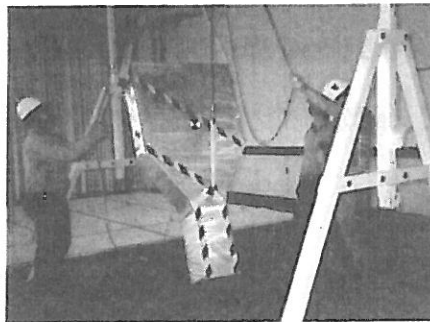
Please see the enclosed brochure for more information. To register call WRRC & CET today at
(800) 727-6355



1999 Rigging Training Workshop!

We are tentatively looking at Chicago, IL as the "host" city for WRRC's 9th Annual RTW. Look for the date and location for this 3-day hands-on workshop in our next newsletter or call us at 1-800-727-6355 to receive a flyer.

A new Accident Investigation Workshop has been added to the 1999 program. Using a variety of rigging gear and equipment, WRRC has recreated an accident.



Participants are required to investigate and identify any OSHA/ANSI violations, poor rigging practices etc.

Attendees will also participate in classroom Rigging Levels I, II, and III, then rotate through the Mobile Learning Center's hands-on work stations. Other subjects addressed in the hands-on portion include jacking & rolling, load control, hitch systems, and drifting loads utilizing our steel-framed Drifting & Winching Structure (16' x 16' x 10').

A highlight to the program is a Rigging Rodeo with teams competing by rigging and moving a series of loads while receiving points for accurate load weight estimation, safety, communication and efficiency in accomplishing the task.



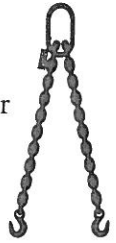
Certified Inspector Program

Don't miss out on attending a CIP program in 1998. Dates for the two remaining programs are:

Sept. 14 - 17

Dec. 7 - 10

Please call today to register and reserve your seat.
(800) 727-6355



This course addresses the inspection and removal criteria for wire rope, wire rope slings, synthetic web slings, chain slings and below-the-hook lifting devices.

The instructional format is based on OSHA, CFR 29, 1910, ASME B 30 series and ASTM A-391 & ASTM E-4.

INDUSTRY NEWS

ACRP

The Association of Crane & Rigging Professionals held their 1998 National Assembly and Workshop annual meeting in Milwaukee, WI, on May 28-30, 1998.

A series of field trips took place during the first two days of the meeting. Tours were conducted at the Manitowoc Crane Facility, P&H Overhead Crane Plant and at Rigger's Manufacturing. For information about next year's National Meeting near York, PA or ACRP Membership, call 1-800-690-3921.

WORKSHOP

Answer Key for Page 1

1. A. 7/8" B. EN150
C. 1/2" D. 7/8"
2. A.
Slings: $2.12 \times 12,000 = 25,440$ Within RC
Shackles: $2.12 \times 12,000 = 25,440$ Within RC
B.
Slings: $1.73 \times 6,000 = 10,380$ Beyond RC
Shackles: $1.73 \times 8,000 = 13,840$ Beyond RC
C.
Slings: $1.41 \times 6,000 = 8,460$ Within RC
Shackles: $1.41 \times 16,000 = 22,560$ Within RC