

MASTERLINK

Issue 109

2016

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President's Letter

John Hellums

Hello ACRP Members,

My how time flies. As your President it has been a wonderful three years with one more to go before I step aside. I must say I have had the great pleasure of meeting so many wonderful people with the passion for making our industry better. I applaud each of you and want you to know you can always give me a call.

It has been a little more than a month since we all met in Chattanooga, Tennessee for our 2016 General Assembly. I thought we had an excellent turnout and look forward to seeing all of you next year.

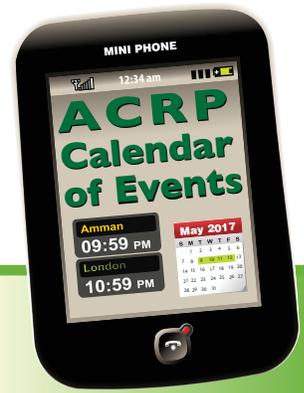
Once again I would like to say thank you to everyone who attended which was 80 plus, with 20 First Timers, which I think may be a record. Now I want to challenge each of the first timers to become members and also bring a first timer with you next year.

I also want to send out a big thank you to our Sponsors and Presenters as well as our Management Team. Here is a special thank you to Columbus McKinnon for hosting the tour of their Forging and Finishing Plants. I also need to thank The Crosby Group, ITI and Overton Safety for putting on the Rigging Jeopardy both days.

ACRP has 8+ new reasons to celebrate. We have expanded our membership with 6 new members and 2 returning members. Help me welcome **Bigge Crane, Campbell Chain & Fittings, CraneTech, Crane Training & Safety Consultants, Kitchen's Crane & Equipment, RLT Engineering Solutions, Trumble Crane & Rigging and Lifting Gear Hire.** Adding additional employees to their memberships are: **American Electric Power, American International Crane Bureau, Crosby, I & I/Slingmax and Overton Safety Training.**

Now a little information on plans for our 2017 General Assembly. We are planning on being in the Pacific Northwest just out of Seattle, Washington. I personally am looking forward to this location. We are looking at the possibility of tours like Boeing, a Synthetic Rope Manufacturer such as Cortland or Samson and maybe Genie/Terex. Our Assembly Chairman and his members have a good start on getting things together for another fantastic meeting.

John C. Hellums
ACRP President



2016

- July 15 - 16** **AWRF Board of Directors**
Hilton Mystic
Mystic, Connecticut
- August 10 - 11** **AWRF Technical Committee**
Interncontinental at the Plaza
Kansas City, Missouri
- September 18 - 22** **ASME B30 Committee (100th Anniversary)**
Sheraton Sand Key
Clearwater, Florida
- October 4 - 6** **WSTDA Fall Meeting**
Hotel Chicago Downtown
Chicago, Illinois
- October 23 - 26** **AWRF General Meeting**
Westin Harbour Castle
Toronto, CANADA
- November 3 - 4** **OIPEEC Management Committee**
Mercure La Rochelle Vieux Por
La Rochelle, FRANCE

2017

- January 18 - 21** **AWRF Technical and BOD Meetings**
Scottsdale Plaza Resort
Scottsdale, Arizona
- January 23 - 26** **ASME B30**
Holiday Inn & Suites, Airport North
Phoenix, Arizona
- ACRP Board of Directors Meeting**
To Be Determined
- April 23 - 26** **AWRF General Meeting**
Westin Savannah Harbor
Savannah, Georgia
- May 9 - 12** **ACRP General Assembly**
Tulalip Resort & Casino
Tulalip, Washington
- May 22 - 25** **ASME B30**
Philadelphia, Pennsylvania
- October 22 - 25** **AWRF General Meeting and P.I.E.**
Hilton Minneapolis
Minneapolis, Minnesota



ACRP GENERAL ASSEMBLY

MAY 9-12, 2017

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Employer's Responsibilities for Training Employees Under 29 C.F.R. 1926.1400

This report outlines an employer's duties for training employees as prescribed under OSHA regulations section 1926.1400, et seq.

Employer's Responsibilities for Training Crane Operators

The employer's duty to ensure that its operators are competent and qualified to operate cranes was extended to November 10, 2017. *See* § 1926.1430(c)(2) ("During the four-year phase-in period for operator certification or qualification . . . employers must train each operator who has not yet been certified or qualified in the areas addressed in § 1926.1427(j).") Continuation of the employer's duty to train during the extended implementation period was essential, as there is no defined method of employee certification required under section 1926.1427(k)(2)(i) and (ii), the phase-in provisions. ("The employer must ensure that operators of equipment covered by this standard are competent to operate the equipment safely. . . . Where an employee assigned to operate the machinery does not have the required knowledge or ability to operate the equipment safely, the employer must train that employee prior to operating the equipment. The employer must ensure that each operator is evaluated to confirm that he/she understands the information provided in the training.").

Section 1926.1427 contains the requirements for operator competency and qualification. To meet the requirements, operators must be assessed and determined to have the skill necessary to operate a specified type (but not capacity) of crane safely. Section 1926.1427(j) provides the criteria for crane employees:

- (1) A determination through a written test that:
 - (i) an individual knows the information necessary for safe operation of the specific type of equipment the individual will operate, including all of the following:
 - (A) The controls and operational/performance characteristics.
 - (B) Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment.
 - (C) Procedures for preventing and responding to power line contact.
 - (D) Technical knowledge similar to the subject matter criteria listed in Appendix C of this subpart applicable to the specific type of equipment the individual will operate. Use of the Appendix C criteria meets the requirements of this provision.
 - (E) Technical knowledge applicable to:
 - (1) The suitability of the supporting ground and surface to handle expected loads.
 - (2) Site hazards.
 - (3) Site access.
 - (F) This subpart, including applicable incorporated materials.
 - (ii) The individual is able to read and locate relevant information in the equipment manual and other materials containing information referred to in paragraph (j)(1)(i) of this section.
 - (2) A determination through a practical test that the individual has the skills necessary for safe operation of the equipment, including the following:

- (i) Ability to recognize, from visual and auditory observation, the items listed in § 1926.1412(d) (shift inspection).
- (ii) Operational and maneuvering skills.
- (iii) Application of load chart information.
- (iv) Application of safe shut-down and securing procedures.

After the operator is qualified, the *employer is required* to ensure that the operator operates the equipment in accord with the requirements of section 1926.1427.

In the event an employee assigned to operate a crane does not have the requisite knowledge or ability to operate the crane safely, section 1926.1427(f) requires that the employer must provide each operator-in-training with sufficient training prior to operating the equipment to enable the operator-in-training to operate the equipment safely under limitations established in section 1926.1427(f), and any additional limitations established by the employer.

While operating the equipment, the operator-in-training must be monitored by an individual who is an employee or agent of the operator-in-training's employer, is a certified operator, and is familiar with the proper use of the equipment's controls. While monitoring, the trainer must perform no tasks that detract from the trainer's ability to monitor the operator-in-training. See also § 1926.1430(g)(1) ("The employer must evaluate each employee required to be trained under this subpart to confirm that the employee understands the information provided in the training.") For equipment other than tower cranes, the operator's trainer must be in direct line of sight of the operator-in-training and communicate verbally or by hand signals. The trainer must continuously monitor the operator-in-training at all times. Under section 1926.1430(c)(1), if an operator-in-training fails a qualification or certification test, then the employer must provide re-training.

Section 1926.1430(g)(2) requires that the employer provide refresher training in relevant topics for employees when, based on the conduct of the employee or an evaluation of the employee's knowledge, there is an indication that retraining is necessary. This section also states that when training is required under section 1926.1430, it must be

provided at no cost to the employee. § 1926.1430(g)(3). Note: there is no requirement for the employer to pay employees for certification.

What is important here is that employers have continuing obligations to train their crane operators during the time OSHA considers potential rulemaking options with respect to crane operator certification.

Employer's Responsibilities for Training Signalpersons

Under section 1926.28(a) and section 1926.1430(b), employers must ensure that each signalperson meets the qualification requirements in section 1926.1428(c) before that person may give any signals. Employers have two options for meeting this requirement:

The signalperson has documentation from a third-party qualified evaluator showing that the signalperson met the qualification requirements under Section 1926.1428(a)(1); or

The employer's qualified evaluator has assessed the signalperson and provided documentation that he or she met the qualification requirements under Section 1926.1428(a)(2).

Third party qualified evaluator is an entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether an individual meets the qualification requirement for a signalperson.

A qualified evaluator that is not a third party is a person employed by the signalperson's employer who has shown that he/she is competent in assessing whether an individual meets the qualification requirements for a signalperson.

The employer must make the documentation for whichever option is used available at the site while the signalperson is employed by the employer. Such documentation is considered "available" when it is physically present on the site or retrievable via an on-site computer. The documentation must specify each type of signaling (e.g., hand signals, radio signals, etc.) for which the signalperson meets the requirements of paragraph (c) of this section.

If subsequent actions by the signalperson indicate that the individual does not meet the qualification requirements, the employer must not allow the individual to continue working as a signalperson until retraining is provided and a reassessment is made under one of the two options that confirms that the individual meets the qualification requirements.

Employer's Responsibilities for Training Assembly/Disassembly Directors

To conduct assembly/disassembly, an employee ("A/D Director") must meet the criteria for both a competent person and a qualified person. § 1926.1401. Under section 1926.1403, the employer must certify that the A/D director understands the applicable assembly/disassembly procedures.

Section 1926.1406(a) requires that employers ensure that their assembly/disassembly procedures prevent unintended dangerous movement, and prevent collapse of any part of the equipment; provide adequate support and stability of all parts of the equipment; and position employees involved in the assembly/disassembly operation so that their exposure to unintended movement or collapse of part or all of the equipment is minimized.

Employer's Responsibilities for Training Riggers

When an employer is using an employee to rig materials, the employer is responsible to ensure that the employee is a qualified rigger. An employer is required to use a qualified rigger during hoisting activities for assembly and disassembly work, and whenever workers are within the fall zone and hooking, unhooking, or guiding a load, or doing the initial connection of a load to a component or structure. § 1926.1425(c).

To establish that an employee is a qualified rigger, the employer may consider determinations made by a third party, such as completion of a joint labor management apprenticeship training program. Additionally, the employer is required to guarantee that the rigger has the ability to recognize and resolve any issues relating to the specific rigging work to be performed.

While employers may consider determinations made by a third party

evaluator, they still retain the ultimate responsibility for ensuring that any employee assigned to rig a load is qualified. Therefore, employers are not required to use a third party entity to assess the qualifications of any rigger candidate.

One alternative way for a rigger to be considered qualified is based on the employee's acquisition of extensive knowledge, training, and experience. This knowledge and experience can be developed over time, whereby the employee becomes qualified if he successfully demonstrates the ability to solve problems related to rigging loads.

Employer's Responsibilities for Training Maintenance and Repair Employees

Maintenance and repair personnel must meet the definition of a qualified person with respect to the equipment and maintenance/repair tasks performed. § 1927.1401. The employer has to ensure that employees operate any maintenance and repair equipment under the direct supervision of an operator who meets the operator qualification and certification requirements under § 1926.1427. Alternatively, employees may work without direct supervision if they are familiar with the operation, limitations, characteristics, and hazards associated with the type of equipment. Under section 1926.1430(f), employers must train maintenance and repair employees in the tag-out and start up procedures in sections 1926.1417(f) and (g).

Conclusion

The deadline extension for crane operators to obtain certification was extended from November 10, 2014 to November 10, 2017. The prolonged implementation period for the proposed regulatory language is also an extension of the status quo. OSHA has not removed the requirement for employers to ensure crane operators are qualified and competent to operate cranes, and OSHA has not changed the training provision of the standard. Finally, the employer's responsibilities for training riggers, signalpersons and other employees to be qualified remain in place under sections 1926.1427 and 1926.1430, as well as the other provisions under section 1926.1400, et seq.



2016 Board Election Results

New Board Members

Neil Hays – ACRA Enterprises

Amanda Jordan – American International Crane Bureau

Joseph Orlando – Cianbro



From left: Joe Orlando, Cianbro, Amanda Jordan, American International Crane Bureau and Neil Hays ACRA Enterprises

Re-elected Board Members:

Joe Kuzar - Industrial Training International (ITI)

Mike Riggs – Rigging Institute

Rob Scherbarth – Overton Safety Training

Paul Kuber – Retired ExxonMobil

Mike Parnell – Industrial Training International (ITI)

Charles “Cooter” Sager – ExxonMobil

Danny Bishop – Crosby

David Johnson – SmithAmundsen

Tom De Soo – I & I / Slingmax

OSHA Releases Annual Top Ten Citations List

Last month, the federal Occupational Safety and Health Administration issued its annual list of the ten most cited safety standards for the fiscal year that ended September 30. The list was unchanged from the prior year, and demonstrates OSHA's emphasis on the construction industry and hazards associated with construction work. The number of citations issued for these ten standards run from 6,721 for fall protection, down to 1,973 for general electrical requirements.

The top ten standards cited are as follows:

- Fall protection
- Hazard communication
- Scaffolding
- Respiratory protection
- Lockout/tagout
- Powered industrial trucks
- Ladders
- Electrical – wiring methods
- Machine guarding
- Electrical – general requirements



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10 Audit Points for Your Crane & Rigging Operations: A Management Perspective



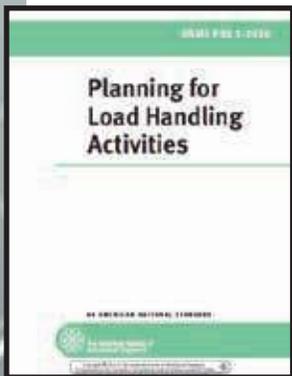
When a site owner or employer wants to determine their existing 'high risk' areas concerning load handling activities, they may wish to conduct an audit of their operations, as performed by an internal team of subject matter experts or a competent external organization.

A really thorough audit or evaluation of work practices related to load handling and crane/rigging work must include a baseline audit followed by a post audit. If the employer has any intention of acting on the audit findings and recommendations, then a post evaluation is needed to determine if there are still operational gaps or areas of improvement that should be attended to as identified during the initial audit phase.

I would recommend a ten point approach with the first nine focusing on the initial evaluation effort and the tenth on the post review.

1. Existing Procedures
2. Planning
3. Equipment Condition
4. Technical Performance
5. Safety of People, Places and Things
6. Proper Equipment / Tasks
7. Efficiency
8. Training of Personnel
9. Management Support
10. Post Audit Review

Let's dive into the elements one at a time starting with the employer's Existing Procedures. It is important to understand the organization has a standing set of corporate policies and procedures and how they adhere to industry guidelines such as ASME. Are they controlling their operations in order to meet the applicable OSHA regulations, the equipment manufacturer's requirements and the site policies (Dept. of Energy, etc.).



The second area of evaluation is how load handling tasks and projects are Planned. Are the tasks clearly defined for the lift planner, lift director and eventually the LHE (load handling equipment) operator, riggers

and signal persons? How does supervision measure comprehension about task and project assignment. Of significant importance is the matching of task requirements to the competency of the persons assigned. Can the project be completed with existing personnel and equipment or does the planning process account for uniquely trained and equipped specialists and subcontractors? Is the planning based on assumed or factual information? What documentation is available to support the 'knowns' in order to lower the risks? Has the planning process been evaluated for its 'sensitivity'?

What is the Condition of Equipment? How aggressive is the organization's inspection program for LHE's, rigging and ancillary equipment? What is the 'response' time for repair or replacement of worn or damaged components? How effective is their preventive maintenance program? Is management willing to repair/replace equipment or are they willing to bend/break the rules as noted by the manufacturer, OSHA or ASME?



How do employees stand in the Technical Performance category? I generally provide written exams to randomly selected employees who perform specific tasks; i.e., basic rigging, advanced rigging, signaling, hydraulic mobile crane operation, overhead crane operation.

While on-site during the audit process the auditor should observe and record findings related to actual field load handling activities, as if the employees are being evaluated for a qualification. Is their performance demonstrating real knowledge of the subject matter and true competency? Personal field interviews should be conducted to determine if work tasks are being performed because that's how they showed me to do it 12 years ago, or if the employee

is able to make informed decisions in arriving at their load handling approach. Another critical area is to evaluate if the employees are willing to defend the equipment from improper use or hazardous practices. This often can be influenced by supervision who have put production ahead of safety. Note the results for the final report and recommendations.



A thorough evaluation should be made concerning the People, Places and Things related to project and task performance. Do the employees respect barricades and limited access areas? Is there a rampant level of 'over-confidence' that almost wishes to defy gravity? Are folks implementing some form of risk assessment during standard load handling events, at all levels of the load handling team? Due to congested work areas, what process is in place to avoid inadvertent contact between LHE's? Does the employer permit a mobile crane to work in in a building where overhead cranes are operating? Is there an active crane collision prevention plan in place to avoid injury or damage, i.e., mobile vs mobile, overhead vs. overhead or mobile vs. overhead?

Have employees been provided with the Proper Equipment for the Tasks? You might observe an operation that is somewhat 'caveman' in nature while another is highly sophisticated and suitable for an 'astronaut'. Are there tools and equipment available in the marketplace that can lower risks and injuries? If so, these items should be proposed during the recommendations close-out with the employer. Is there a large inventory of 'homemade' rigging or field modified LHE's in use? Often, supervision is either unaware of approved equipment alternatives



or they are unwilling to invest in the proper equipment. In either case, the auditor should be duty bound to bring the recommended changes into discussion with the employer for the sake of the employees and their personal safety.

Along with the evaluation of proper equipment should be the observation for Efficiency. Generally, specialized equipment will lower risks to personnel while also raising productivity. Though efficiency may not seem to be a target for a crane and rigging audit, the selection of equipment for specific tasks can easily be paid for in lost-time and a substantially lower level of hazard to persons performing work.

Is there an active Training Program in place? As new technology brings upgraded equipment

Total Scores	All Possible	Average	Subject Area
250	280	70%	Rigging
85	100	85%	Rigging Inspector
241	284	85%	OC Operator
22	25	48%	OC Inspector
340	422	81%	MCO - General
321	420	81%	MCO - Load Chrg.
154	333	46%	MC Inspector

into the operation, are folks well prepared to manage the equipment in the proper manner? Do training events match the tasks that are assigned to employees? How does the training activity capture the participant's comprehension; written and hands-on testing? Does the training provide for a competency level that provides for 'problem-solving' for the employee in order to recognize a greater hazard?

Often at the core of an audit is the level of Management Support. Is the supervision and management team truly providing ongoing support for field personnel or is it simply lip service? Are they (the organization) making a financial investment in the operation to the most reasonable level possible in the training and equipment arenas? Is there a line in the sand that the employer will not allow folks to cross in order to accomplish a task or project, meaning a resistance to cutting corners? The auditor has to find out if production is king and employees and departments are awarded accordingly, or does safety have a direct and effective influence in the operation? This portion of the audit as with all other elements must bring



Continued on page 19



Training Is Essential For Proper Selection Of Rigging Hardware

Proper selection of rigging hardware for overhead lifting applications requires proper training in order to insure that the correct size and type of rigging hardware is selected for the application.

Before selecting the hardware there are a few useful tips to consider:

1. The rigging hardware selected must have working load limits (W.L.L.) that exceed the total load imposed on the hardware.
2. The rigging hardware selected should have diameters greater than the diameter of the wire rope.
3. If eye bolts are used they must be shouldered eye bolts if subjected to angular loading. They must be installed correctly.
4. If hoist rings are used they must be properly installed per manufacturer guidelines.
5. The rigging hardware at the load connection will feel the same about of tension as the sling.
6. Proper inspection of slings and rigging hardware prior to use is essential.

Let's begin with the load to be lifted:

Figure "A": The load to be lifted has center of gravity in the middle, between the pick points. The horizontal sling angle is 60 degrees. Total load to be lifted equals 10,000 or 5 tons. The wire rope slings to be used are 9/16" diameter (EIP) (IWRC).

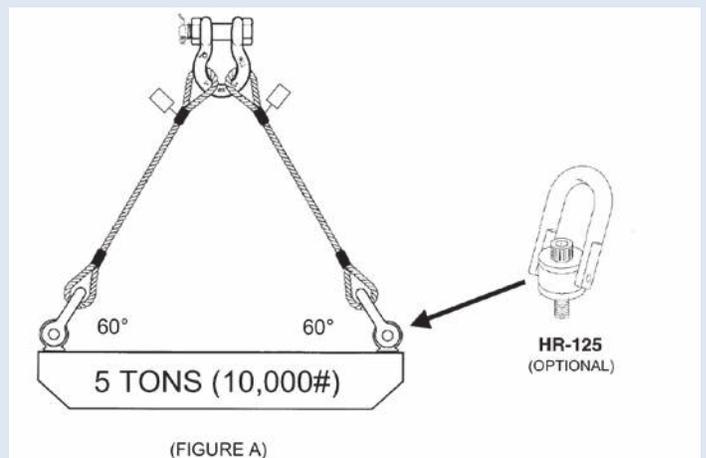
In order to properly determine correct size and type of hardware, the competent rigger should have received training on a minimum of the following topics, prior to the use:

- How to calculate load weight
- How to determine location of center of gravity
- How to calculate sling tension
- How to select proper rigging hardware and slings

Knowledge of ASME, OSHA and manufacturer recommendations is essential as well. ASME B30.26 "Rigging Hardware" and ASME B30.9 "Slings" standard requires users of rigging hardware and slings to be trained on proper selection, inspection, cautions to personnel, effects of environment and rigging practices.

Note: Items discussed above are just a few of the main things that should be considered.

Task 2 on page 12



CROSBY SHACKLES					CROSBY HOIST HOOKS					12
NOMINAL SIZE (IN) DIAMETER OF BOW	CARBON MAXIMUM WORKING LOAD TONS(T)	ALLOY MAXIMUM WORKING LOAD TONS(T)	INSIDE WIDTH AT PIN (INCHES)	DIAMETER OF PIN (INCHES)	CARBON MAXIMUM WORKING LOAD TONS(T)	CODE	ALLOY MAXIMUM WORKING LOAD TONS(T)	CODE	THROAT OPENING WITH LATCH	DEFORMATION INDICATOR A - A
3/16	1/3	—	.38	.25	3/4	DC	1	DA	.88	1.50
1/4	1/2	—	.47	.31	1	FC	1-1/2	FA	.97	2.00
5/16	3/4	—	.53	.38	1-1/2	GC	2	GA	1.00	2.00
3/8	1	2	.66	.44	2	HC	3	HA	1.12	2.00
7/16	1-1/2	2.6	.75	.50	3	IC	*4-1/2,5	IA	1.06	2.50
1/2	2	3.3	.81	.63	5	JC	7	JA	1.50	3.00
5/8	3-1/4	5	1.06	.75	7-1/2	KC	11	KA	1.75	4.00
3/4	4-3/4	7	1.25	.88	10	LC	15	LA	1.91	4.00
7/8	6-1/2	9.5	1.44	1.00	15	NC	22	NA	2.75	5.00
1	8-1/2	12.5	1.69	1.13	20	OC	30	OA	3.25	6.50
1-1/8	9-1/2	15	1.81	1.25	25	PC	37	PA	3.00	7.00
1-1/4	12	18	2.03	1.38	30	SC	45	SA	3.38	8.00
1-3/8	13-1/2	21	2.25	1.50	40	TC	60	TA	4.12	10.00
1-1/2	17	30	2.38	1.63						

* 320 EYE HOOK IS NOW RATED AT 5 TONS(T)

USE SCREW PIN SHACKLES WHEN PICKING AND PLACING, TIGHTEN PIN BEFORE EACH LIFT



USE BOLT SHACKLES IN PERMANENT OR LONG TERM INSTALLATIONS



VISUAL VERIFICATION OF PROPER HOOK ENGAGEMENT IS REQUIRED IN ALL CASES

MAKE SURE SLINGS ARE IN BASE OF THE HOOK AND THAT THE LATCH IS NOT FOULED



DO NOT TIP LOAD, SIDE LOAD OR BACK LOAD HOIST HOOKS



120° MAXIMUM INCLUDED ANGLE. SHACKLE PIN MUST BE PLACED IN HOOK WHEN USED AS A COLLECTOR. USE ONLY SCREW PIN OR BOLT TYPE SHACKLES

90° MAXIMUM INCLUDED ANGLE

WHEN SLINGS PLACED INTO HOOK, THE MINIMUM HORIZONTAL SLING ANGLE IS 45°

CROSBY SHACKLES AND HOIST HOOKS ARE RATED IN METRIC TONS(T)

Task 1: Use the rigging card panel above to select the correct size carbon shackles to be used at the top of the rigging triangle and at the load connections for the application depicted in Figure A.

CROSBY SHOULDERED G-277 AND S-279 EYE BOLTS					CROSBY HR-125 HOIST RINGS			14
SHANK DIAMETER (IN.)	WORKING LOAD LIMIT IN-LINE PULL (LBS.)	WORKING LOAD LIMIT 60 DEGREES SLING ANGLE (LBS.)	WORKING LOAD LIMIT 45 DEGREES SLING ANGLE (LBS.)	WORKING LOAD LIMIT/ANGLE LESS THAN 45 DEGREES (LBS.)	THREAD SHANK SIZE U.N.C. (IN.)	WORKING LOAD LIMIT AT ALL ANGLES (LBS.)	TORQUE (FT - LBS)	
1/4	650	420	195	160	5/16	800	7	
5/16	1200	780	360	300	3/8	1000	12	
3/8	1550	1000	465	380	1/2	2500	28	
1/2	2600	1690	780	650	5/8	4000	60	
5/8	5200	3380	1560	1300	3/4	7000	100	
3/4	7200	4680	2160	1800	7/8	8000	160	
7/8	10600	6890	3180	2650	1	10000	230	
1	13300	8645	3990	3325	1-1/4	15000	470	
1-1/4	21000	13600	6300	5250	1-1/2	24000	800	
1-1/2	24000	15600	7200	6000	2	30000	1100	

SHOULDER EYE BOLTS

- NEVER EXCEED WORKING LOAD LIMITS.
- NEVER USE REGULAR NUT EYE BOLTS FOR ANGULAR LIFTS.
- ALWAYS USE SHOULDER NUT EYE BOLTS FOR ANGULAR LIFTS.
- FOR ANGULAR LIFTS, ADJUST WORKING LOAD AS SHOWN ABOVE.
- ALWAYS TIGHTEN NUTS SECURELY AGAINST THE LOAD.
- ALWAYS APPLY LOAD TO EYE BOLT IN THE PLANE OF THE EYE.



SWIVEL HOIST RINGS

- WHEN USING LIFTING SLINGS OF TWO OR MORE LEGS MAKE SURE THE FORCES IN THE LEG ARE CALCULATED. SELECT THE PROPER SIZE SWIVEL HOIST RING TO ALLOW FOR LOAD IN SLING LEG.
- ALWAYS INSURE HOIST RING IS FREE TO ALIGN ITSELF WITH SLING.
- ALWAYS INSURE HOIST RING IS PROPERLY TORQUED TO REQUIRED VALUE.



CROSBY EYE BOLTS AND HOIST RINGS









Task 2: Use the rigging card panel above to select the correct size eye bolts and or hoist rings for the application depicted in Figure A.

Hope you enjoyed this fundamental exercise in proper selection of rigging hardware for this particular lift. Hope to see you at the 2017 ACRP General Assembly May 9 -12th in Tulalip, WA.

Rig Safe!

Answers on page 20







Thank You To This Year's Sponsors





2015 Top Trainers by the Association of Crane & Rigging Professionals (ACRP) and Crane & Rigging Hot Line.



Patrick Clark and
Katie Parrish, Crane Hot Line Editor

Patrick Clark, National Rental Support Manager for Lifting Gear Hire, and Jeffery Ellis, Instructor and Field Services Manager for Crane Tech LLC, have been named 2015 Top Trainers by the Association of Crane & Rigging Professionals (ACRP) and Crane & Rigging Hot Line.



Jeffrey Ellis and
Katie Parrish, Crane Hot Line Editor

The Journey to Safety Starts with Trainers Who Lead the Way

Industry and Peer Recognition

Rewarding a job well done.

Promoting a Culture of Safety

Recognizing trainers who have had a positive impact on the industry.

Investing in the Future

Delivering scholarships to further the education of workers.



Who is eligible?

- ★ Contractors
- ★ Rigging Suppliers
- ★ Equipment Dealers
- ★ Manufacturers
- ★ Rental Companies
- ★ Training Companies

Winners Receive

- Trophy delivered at Awards Ceremony
- Registration/Travel Expenses to 2017 ACRP General Assembly
- \$2,000 Education Scholarship
- Feature article in Nov. 2016 Crane Hot Line

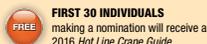
PLUS Free registration to 2016 CRC Canada for all Honorable Mention nominees

SEEKING

- Crane or Rigging Trainers
- Craft Instructors
- Safety Directors
- CTE Instructors



Nominate a Crane or Rigging Trainer by July 31, 2016
GET STARTED AT www.toptraineraward.com



9th Annual Training Excellence Awards for Crane and Rigging Trainers in Construction and Heavy Industry



Trainers Lead the Way to Safety

Crane & rigging trainers will be recognized for having a positive impact on students, the work environment or the industry through the use of innovative training techniques or hands-on instruction, by encouraging peer or corporate accountability, and/or through quantitative or anecdotal evidence that the training was successful.

Top Trainers are regarded as some of the highest quality instructors in the industry. Corporate sponsorships recognize and encourage safe use of cranes and rigging equipment by furthering the education of trainers through scholarships for train-the-trainer courses or industry conference attendance. Alternatively, Top Trainers can donate the scholarship to a promising student entering the industry.

Winners will be selected by ACRP Judges, former Top Trainers, and Crane Hot Line Editors



ENDORSED BY ACRP The association's mission of improving crane operations and rigging activities through education is closely aligned with the purpose of the Top Trainer program. ACRP will assist in judging nominations for the award.

Top Trainers will receive:

- \$2,000 Education Scholarship
- Registration and Travel Expenses to 2016 ACRP General Assembly in Dallas, Texas
- Trophy delivered at an awards ceremony
- Feature Article in Crane Hot Line

SPONSORSHIP LEVELS

- ★ **PLATINUM \$5,500 (Limit 2)**
 - Exclusive Sponsorship of One Top Trainer Award (Corporate or Professional)
 - Logo on November 2016 Cover of Crane Hot Line
 - 120x180 Banner Ad on CraneHotLine.com for Three Months, Recognizing the Company as a Platinum Top Trainer Sponsor
 - Company Logo and Link to Company Website on Top Trainer Email Blast Sent to 13,000 Crane Hot Line Subscribers
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 - 120x180 Banner Ad in Three Issues of Lifting 360 Email Newsletter Sent to 17,000 Subscribers
 - Branding on Promotional Materials, such as Websites, Press Releases, and Ads
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 - Company Logo and Link to Company Website on Top Trainer Email Blast Sent to 13,000 Crane Hot Line Subscribers
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To Reserve Your Sponsorship Contact:
Cindy Kirby
cindy.kirby@hcgj.media
515-868-0804

Special Thanks to our 2015 Sponsors



OSHA Penalties Set To Increase In 2016

For the first time since 1990, the Occupational Safety and Health Administration (OSHA) has been authorized to increase its civil penalties. The provision was inserted into the expansive Bipartisan Budget Act of 2015, which was signed this month by President Barack Obama.

OSHA is authorized to conduct workplace inspections and investigations to determine whether employers are complying with standards issued by the agency for safe and healthful workplaces.

Section 701, entitled the “Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015,” permits OSHA to increase its civil penalties, following a one-time “catch up adjustment” in 2016. The increases, which are expected to be significant, will be calculated based on the Consumer Price Index (CPI) between 1990 - 2015.

Based upon the “CPI Inflation Calculator” from the Bureau of Labor Statistics website, the maximum allowable OSHA fines beginning next year are estimated to increase as follows:

- **“Other Than Serious”** citations — where there is a direct relationship to job safety and/or workplace health, but it is unlikely to result in death or serious bodily injury — have a current maximum fine of \$7,000, but are expected to increase to approximately \$12,500 each;
- **“Serious”** citations — where there was a death or serious bodily harm and the employer knew or should have reasonably known about the hazard — have a current maximum fine of \$7,000, but are expected to increase to approximately \$12,500 each;
- **“Willful”** citations — where an employer knows it is in violation of OSHA standards and is aware of the hazardous condition, and makes no reasonable effort to remedy the condition — have a current maximum fine of \$70,000, but are expected to increase to approximately \$125,000 each; and



- **“Repeat”** citations — where an OSHA standard is violated after the initial charge for the same or similar breach — have a current maximum fine of \$70,000, but are expected to increase to approximately \$125,000 each.

The Act will be adjusted through an interim final rule-making, and the adjustment will go into effect by August 2016. Additionally, the Act mandates annual inflation increases for OSHA penalties going forward. Starting in January 2017, OSHA will be required to publish these fine increases by January 15th of each year. The annual adjustments will not require formal rule-making.





Association of Crane & Rigging Professionals

Membership Application Form

Company Name: _____ Website: _____

Primary Member Name: _____ Title: _____

Additional Member Name(s): _____

Mailing Address: _____

City: _____ State / Province: _____

Zip or Postal Code: _____ Email Address: _____

Phone: _____ Fax: _____

Membership Category (Select One):

Instruction:

Members whose majority of work activity is to provide training and educational services.

Engineering:

Members whose majority of work activity is to provide engineering.

Field Operations:

Members whose majority of work activity is to oversee or conduct load handling activities.

HSE:

Members whose majority of work activity is to provide health, safety and environmental services.

Associate Member:

Members whose majority of work activity involves business management, professional services, marketing, sales or manufacturing.

Annual Membership Dues

\$495.00 – primary member per calendar year

\$165.00 – each additional member from the same organization

Payment Method (all funds are USD): Check (payable to “ACRP”) Check # _____

Visa MasterCard American Express All Credit Card Payments add 3%

Credit Card #: _____ Expiration Date: _____

Name on Card / Signature: _____ Date: _____

Association of Crane & Rigging Professionals

28175 Haggerty Road

Novi, MI 48377

P: 800.690.3921 / +01.248.994.4312 (international) www.acrp.net Fax: +248.994.4313

Thank You To all the 2016 General Assembly Presenters!

Link-Belt Pulse: A Total Operating System –
David Tripp, Link-Belt Cranes

Alternative Load Handling Approaches –
Brett Werlein, Enerpac

Stability & Equilibrium in Rigging Arrangements –
Keith Anderson, Bechtel Equipment

Load Drifting –
Keith Anderson, Bechtel Equipment

The Bechtel Take on Taglines & Load Control –
Monty Chisolm, Bechtel Equipment

*Lift Director Certification: An OSHA
and NCCCO Perspective –*
Hank Dutton, Travelers Insurance

Safeguarding the Crane Operator –
David Tripp, Link-Belt Cranes

10 Audit Points for Your Crane & Rigging Operations: A Management Perspective

Continued from page 10

to light the good, bad and ugly of the findings. Again, any auditor worth his/her salt must be willing to speak the truth regardless of the audience.

Once the audit surfaces the findings and a list of recommendations is prepared it must be presented in a digestible format, generally PowerPoint and written report. It is best to be able to present the 'report' in person or during a virtual meeting. It may help to rate different areas of operation by using a point scoring method (1-5) or grade school (A-F) approach. Use a system people understand. The recommendations should generally be affordable unless a particular operation is being performed by a complete mis-match of equipment for the application. In some cases I have had to recommend a \$500K load turning table to a client in to order to avoid hazardous load flopping while turning a load with a single hoist overhead crane. Not every fix to a problem can be achieved for a dollar.

It is really the employer's responsibility to establish an 'action plan', but the auditor may be called on to advise as to the high risk priority areas. Many of the employers that have asked us to perform audits are very interested in having a road-map to follow in making positive changes. We will often create a matrix that shows the 'problem', the 'priority', the 'fix', with additional columns for timeline, cost and the person responsible to see that it gets done.

The final item is really the 10th step which is a Milestone Audit. At a pre-agreed date, the auditor

returns to the site and makes observations of how the 'changes' have been implemented and their overall impact. The re-visit may occur at the 12th, 24th and 36th month from the initial audit to measure and report on the improved status of the operation. The re-visits are mini-audits using some of the same techniques as described above; testing of personnel, maintenance and inspection record reviews, equipment inspection, live load handling activity observations and interviews. A milestone report should be produced to alert supervision as to the progress that has been made and areas where progress has not been achieved. They will likely review their 'action plan' and determine what steps should be made to close the gaps.

An audit should always be conducted with the safety of site personnel in mind along with the families of those employees. A week barely passes that we don't hear about a preventable industrial or construction incident occurring. So, the auditor must be frank and honest in the evaluation and reporting process in an effort to ensure that families don't experience the loss of one of their own, due to poor decisions, poor equipment selection, and the like. The auditor is not working for a paycheck from the employer, he/she is working for the families who depend on the employees involved in the operation.

Mike Parnell, ITI –Field Services, mike@iti.com



New Members: Please give a warm ACRP welcome!

Bigge Crane and Rigging
Tommy Reed / Chris Haynes



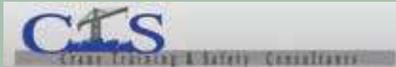
Campbell Chain & Fittings
Kevin Brigman / Michael Mazzoli / Russell Davidson



CraneTech
Bo Collier



Crane Training & Safety Consultants
John Glinski



Kitchen's Crane & Equipment
Eddy Kitchen



Lifting Gear Hire
Patrick Clark



RLT Engineering Solutions
Jeff Collins



Trumble Crane & Rigging
Chad Trumble



New Additional Company Members:

American Electric Power (AEP)
Wayne Palumbo

American International Crane Bureau (AICB)
Justin Meade

Crosby
Jason Birdwell

I & I Sling / Slingmax
Corey Sullivan

Overton Safety Training
Danielle Fischer

Rigging Jeopardy Answers

Top shackle: Minimum of 7/8" diameter with W.L.L. of 6.5 tons. We need a shackle that has a W.L.L. greater than 5 tons (total load to be lifted plus weight of rigging gear etc.) and has a diameter preferably bigger than the diameter of the wire rope. Note: For the wire rope technical board the pin diameter should never be smaller than the sling body diameter.

Bottom shackles at load connector: Minimum of 5/8" diameter with W.L.L. of 3.25 tons. We need shackles at load connections that have W.L.L.s greater than the sling tension of 5,775 lbs. (1.155 x 5,000lbs = 5,775 lbs.) and preferably has a diameter greater than the diameter of wire rope.

Eye bolts: Minimum size: S-279 7/8". The in line W.L.L. of this eye bolt is 10,600 lbs, but when subjected to the 60 degree horizontal sling angle the eye bolt loses 35 percent of its capacity. In summary, we need an eye bolt that can handle the sling tension of 5,775 lbs. after its W.L.L. has been adjusted for the angular loading imposed on the eyebolt.

Hoist Ring: HR-125 3/4" is rated for maximum of 7,000 lbs. or 3.5 tons. We need a hoist ring that has W.L.L. greater than the sling tension of 5,775 lbs. Swoivel hoist rings keep their full working load limit regardless of the horizontal sling angle, if rigged properly.